

NODERN HOSPIAL

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New York, December, 1913.

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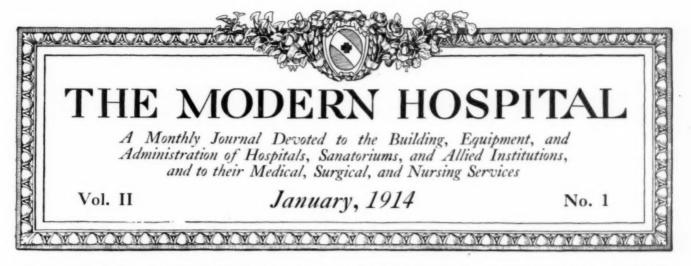
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ARCHITECTURE AND EQUIPMENT OF THE NEW CINCINNATI GENERAL HOSPITAL.

Built for Business, the Main Idea Was to Embody Every Approved Essential for the Scientific Care of the Greatest Number of Patients at the Lowest Cost.

By H. E. HANNAFORD, ARCHITECT.

THE new general hospital is a municipal institution, maintained and operated for the benefit of the sick poor of Cincinnati. It is also affiliated with the medical department of the University of Cincinnati, and is used as a teaching hospital in connection with the municipal university.

For many years it had been realized that the present city hospital, located down town, at the corner of Twelfth street and Central avenue, had outlived its usefulness, it being too small to accommodate the necessary number of patients, and the buildings and equipment were worn out.

Dr. C. R. Holmes, with prophetic vision, foresaw that a new hospital would be needed, and he began an agitation for a new institution that would be modern in its equipment and efficient in its organization and management. He has been untiring in his efforts to give to the city an institution of the highest class, and it is due more to his efforts than to those of any other person that the city is now about to obtain the benefits of this magnificent institution.

The entire management of the building of the new general hospital has been placed with the hospital commission. The commission was appointed by the mayor and consists of Dr. C. R. Holmes, Mr. Harry L. Laws, Dr. J. M. Withrow, and Mr. Louis S. Levi. The mayor of the city, by virtue of his office, is president of the board. Samuel Hannaford & Sons, of Cincinnati, are the architects, and the work on the buildings is in charge of W. C. Jewett, resident engineer.

The original site of the new hospital was selected by a former commission under the leadership of Dr. Holmes. It consists of a tract of

about twenty-seven acres, bounded by Burnet avenue, Goodman street, Eden avenue, and Bethesda avenue, in Avondale, one of the residential sections of the city. Since the purchase of the original tract, additional land has been acquired on the west and north, so that now the hospital tract consists of sixty-five acres. The additional ground thus acquired insures an open, park-like space around the hospital, so that it can never be closely built in, and at the same time gives room for additional buildings for hospital and medical school purposes, as may be required in the future.

This site is on a high plateau, removed from the heart of the business district of the city, but almost in the center of the territory bounded by the corporation line. The group has been planned in a way to take care of the future expansion of the institution. At present twenty-five buildings are completed, but space has been left for about twelve more buildings on the original site of twenty-seven acres, and arrangements made so that these can be connected with the present structures, power plant, etc., as the future growth of the city may demand.

The buildings now approaching completion are: administration building, receiving ward and outdoor clinic, seven ward buildings known as wards A, B, C, H, J, K, and N, operating pavilion, kitchen and dining hall, men's dormitory, detention ward, power and laundry building, disinfecting station, garage and stable, female dormitory, nurses' home, and pathological building.

On the northwest corner of the property a separate hospital group for contagious diseases is now built and occupied, consisting of administration

building, nurses' home, detention ward, and three ward buildings known as wards O, P, and Q. In addition to these three ward buildings, which are intended mainly for children's contagious diseases, there is also under way a separate building for special contagious diseases, such as smallpox. The site where this group of buildings now stands was originally quite rough, and a great amount of grading, cutting, and filling had to be done. The finished ground, however, has been brought to lines that accommodate the group of buildings most admirably. The administrative buildings and the wards occupy the higher part of the lot. the general surface of which has a slope of about 1 percent. The power and laundry building, pathological building, garage and stable, and disinfecting station occupy ground on a lower level toward the west, and will eventually be partially screened from view of the wards by proper parking and planting.

throughout. All buildings are as nearly fireproof as it is possible for human skill to make them. The foundations are of concrete, thoroughly waterproofed and underdrained, so that basements are absolutely dry. The exterior walls are built of brick, faced on the outside with a warm, brown-toned impervious pressed brick, and furred on the inside with hollow brick, thoroughly waterproofed. Trimmings are of white Bedford stone. Floor and roof construction throughout is of reinforced concrete, and the floors are mainly finished with tile, and all base is of terrazzo. Wood floors are used only in the bed rooms and parlors of the nurses' home, female dormitory, and interns' quarters.

The details of the interior finish in every part have been carefully studied. All angles are rounded, and everything has been done to make the buildings as cleanable and as nearly aseptic as possible. There is no interior trim or finish



Fig. 1. New General Hospital, Cincinnati-Ward buildings.

Burnet avenue, which forms the main frontage of the group, is about fifty feet higher than Eden avenue, which is the boundary of the tract on the west, but the planning of the buildings has been done in such a way that they are all connected by means of tunnels, porticoes, and covered ways, so that it is possible to go from any one building in the group to any other building entirely under cover.

In designing these buildings, the main purpose of their existence—namely, the care of the sick—has never been lost sight of. At the same time due regard has been given to planning for efficient and convenient service and easy maintenance. Nothing has been done merely for achitectural effect. The exteriors are very simple and plain, yet the buildings are well proportioned, dignified, and pleasing, and clearly indicate their purpose.

The very best construction has been employed

around doors and windows. All window stools are of marble. The base and door frames are set flush with the finished plastered faces of the walls. All door frames are of steel, and all passageways through the walls are provided with steel guard plates set flush with the plastering. Doors throughout are smooth and flush, without panels or moldings.

The plumbing fixtures are all of special design, made for this particular job, and are vitreous ware with benedict nickel trimmings. All pipe work in connection with the plumbing is of brass, and everything is readily accessible for cleaning or repairs. The heating is furnished by means of a hot water system, with forced circulation. Direct radiators are used, and room and ward ventilation is provided in all ward buildings by means of fans. A double system of fans is used, one for supply and one for exhaust. All air in-

troduced into the wards is thoroughly screened, washed, and humidified.

As much as possible the patients will be given the benefit of treatment in the open air, and all connecting porticoes and covered ways will be used for this purpose, and in each ward building the roof is used as an open air ward. These open spaces on the roof will be provided with awnings, and in the head house connected with each open air ward ample provision for toilet rooms, ward kitchens, and shelter space is provided. All of the porches, covered ways, and roof wards are paved with red quarry tile, and all flashings and sheet metal work throughout are of copper.

The administration building is placed nearest to Burnet avenue, the main thoroughfare on which the hospital fronts, and is the main feature of the group. In this building are located the offices of the superintendent and his assistants, the main business offices, record rooms, and quarters for the staff and interns.

for sleeping rooms for interns and house physicians. At the south end of the second floor a large suite is set aside for the superintendent. This, however, is a temporary arrangement, as it is the intention to build a separate residence for this official at some time in the future. In connection with the various sleeping rooms for interns and house physicians, recreation and sitting rooms have been provided on each floor, and liberal provision made for toilets, shower baths, and other conveniences. The central portion of this building is three stories in height. The north and south wings are two stories, and the roofs over these two-story wings will be used as roof gardens by the occupants of the building.

Directly in the rear of the administration building is placed the receiving ward. This is a onestory and basement building. For the present it will be used not only as an admitting and discharging building, but will be used also for outdoor clinic. A separate building will later be pro-



Fig. 2. New General Hospital, Cincinnati-Ward H.

At the south end of the first floor is a large library and reading room, in which will be housed a very valuable collection of reference books, now the property of the city. At the north end of the same floor is a lecture hall of moderate size, fitted up with preparation rooms and platform, in which the staff and medical societies will hold their meetings.

In connection with the main business offices are located the central telephone exchange and switch-boards for signal service. All buildings, wards, and departments are connected with a system of intercommunicating telephones, and the signal system operated from this building will be used in keeping a record of the movements of the interns and nurses. The signal system used by the patients in communicating with the nurses in the various wards is not connected with the central exchange in the main building.

The upper floors of this building will be used

vided for clinic work. On the first floor are large waiting rooms for men and women, and consultation and examination rooms for the doctors. There is an ambulance porch at the front and also at the rear. The one in the rear is to be used for surgical cases that require immediate attention, and in connection with this rear ambulance porch is an emergency operating and sterilizing room.

In this building there is an office and vault, and here all incoming and outgoing patients will be registered, their clothing and valuables stored, and from here they will be taken to the ward to which they may be assigned. Proper facilities for bathing of patients and for disinfecting and storing clothing are provided. This building is also provided with two emergency wards, which may be used as recovery rooms or used by patients who are brought into the institution during the night, where they will be temporarily cared for until they can be removed to the proper department. In

connection with these wards are the necessary storage closets, nurses' rooms, and duty rooms.

The basement is given up almost exclusively to the care of the clothing of incoming inmates. Here is located a room with a sterilizer for the disinfecting of clothing, a room where clothing can be mended and properly cared for, and also a room especially designed for the treatment of sunstroke, poison cases, and other emergencies. From this receiving ward covered passageways lead to all of the ward buildings.

South of the administration building and fronting on Burnet avenue is located ward A. This is a two-story building, with a roof ward, and is designed for the smaller services. On the first floor will be located the colored male surgical wards and strong wards for police cases. On the second floor will be located the orthopedic department

practically of the same arrangement, consisting of a head house, in which are located elevator, ward kitchen, ward dining room, treatment room, bathroom, sink room, toilet and wash room, linen room, and four small rooms for patients. The wards are approximately 30x90 feet and are arranged for 24 beds. At the south end of the main ward is a large solarium, the walls being mainly of glass, and here are also located toilet and sink room.

Ward B has on the first floor the colored male medical service, and the second and third floors are for the white male medical service. In ward C the first, second, and third floors are used for male surgical cases. Directly behind ward H are placed wards J, K, and N. Wards J and K are of the typical form, having three floors of wards and a roof ward. Ward J, first floor, will be used for female venereal cases, second floor for female

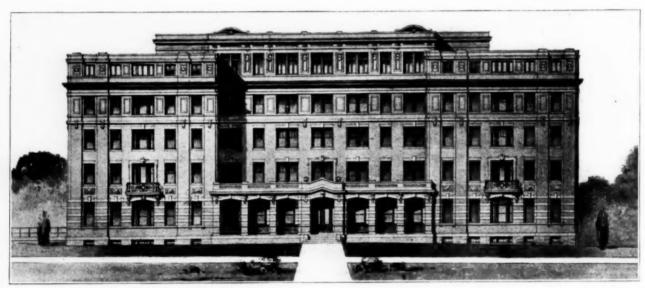


Fig. 3. New General Hospital, Cincinnati-Nurses' home.

and wards for the treatment of eye, ear, nose, and throat diseases.

North of the administration building and also fronting on Burnet avenue is located ward H. The first floor is divided into four separate and distinct departments, each one a complete hospital in itself. The corridors running through this floor are open to the outer air. Into this building will be taken the semi-contagious diseases. The first floor will be used as an observation ward for whooping-cough, mumps, erysipelas, etc.; the second floor for dermatology and male venereal diseases, the latter patients not being admitted to the grounds, but being confined to the use of the roof ward.

Directly behind ward A are wards B and C. These are of a type known as the typical wards. Each building is three stories in height, and the roof is used as an open air ward. Each floor is

medical cases, and third floor for children's medical cases. Ward K, first floor will be used for female surgical cases, second floor for obstetrical cases, and third floor for gynecological cases.

Ward N is of a different type, having two stories and a roof ward. The services will be for psycopathic and neurologic cases. Here are fitted up small rooms for violent cases. These rooms will be closed, with outer and inner doors, and made as nearly soundproof as possible. Floors of these rooms are tiled and the walls lined with enamel brick, and arrangements are made so that they may be thoroughly flushed and cleaned out as occasion may require. In the basement of this building will be located the apparatus for hydrotherapeutic treatment.

In all of these ward buildings the elevators and stairs are inclosed in separate towers and thoroughly isolated from each floor, so that there is

no direct connection between wards that are placed one above the other. This feature has been strictly carried out in all parts of the buildings. Wherever it has been necessary to put in a clothes chute or similar passageway vertically through the buildings, they have been kept separate and distinct for each floor, and every effort has been made to forestall cross-infection. The wards named are those now approaching completion. Space has been left on the grounds for the

building of a number of additional wards, which will be erected as the demand may require.

The contagious hospital, located at the northwest corner of the grounds, is now built and occupied, and the three wards O, P, and Q are, in general, planned along the same lines as the typical wards described above. These buildings, however, are only two stories in height. The wards are somewhat smaller, having a nominal capacity of 16 beds each. Along the central axis of the

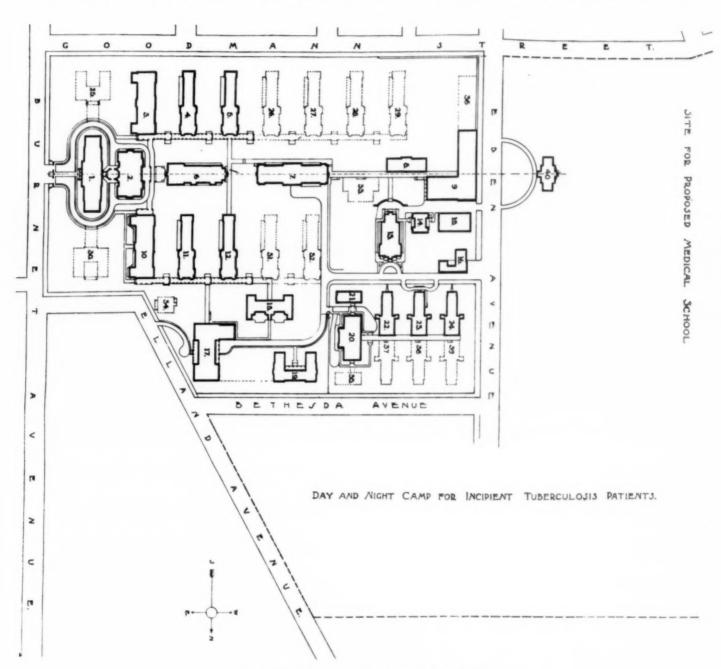


Fig. 4. New General Hospital, Cincinnati-Block plan.

- administration building.
- 2,

- administration building, receiving ward, ward A, ward B, ward E, operating pavilion, kitchen and dining hall, male dormitory and linen room.
- 9, power and laundry build- 16, garage and stable.

- s, power and laundry build-ing.
 10, ward H.
 11, ward J.
 12, ward K.
 13, pathological institute and chapel.
 14, detention ward.
 15, disinfecting station.
- 15, disinfecting station.

- 16, garage and stable. 24, ward Q.
 17, nurses' home. 25, pay war
 18, ward N. 26, ward D.
 19, female dormitory. 20, administration building of contagious group. 29, ward F.
 21, isolation ward. 30, clinic. 31, ward L.
 23, ward P. 32, ward M.

- 25, pay ward. 26, ward D.

- 33, gymnasium and bath
- house. 34, superintendent's resi-dence.
- dence.
 35, private ward.
 36, coal yard.
 37, ward R.
 38, ward S.
 39, ward T.

- 40, special contagious ward.

group and directly to the west of the receiving ward is located the operating pavilion. In this building provision has been made for five operating rooms, two on the first floor and three on the second. These rooms have the necessary adjuncts of etherizing rooms, sterilizing rooms, nurses' work rooms, etc., and on each floor rooms are provided for the operating surgeons and the nurses on duty, with ample toilet facilities.

In this building is located also a work room for the nurses, where bandages and supplies may be prepared, and provision has been made for the accommodation of a limited number of students who may be admitted to the operating rooms, this provision being in the nature of bath and toilet rooms. In the basement of this operating pavilion, nearly above grade line, is located the drug room and its store rooms, and here is located also ceiving room, with a series of store rooms, and here ample provision for the cold storage of meats, milk, eggs, butter, and similar supplies is provided. Here will be located also the tank for the making of ice, and room is provided for its storage. In this basement is located the apparatus for the pasteurizing and care of the milk supply, and a large space is devoted to the sterilization of food boxes used by the patients.

On the first floor are located the main kitchen and bakery, where all the cooking for the institution will be done. Here will be also the dining room for the officers, interns, and male and female help. The nurses, however, will have a separate kitchen and dining room in connection with the nurses' home, but all other persons in connection with the institution will take their meals in this building. Immediately adjoining the main kitchen

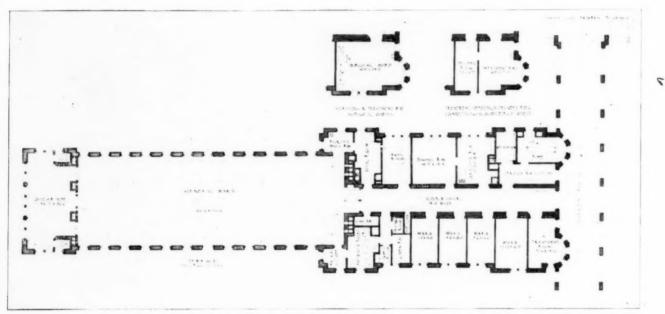


Fig. 5. New General Hospital, Cincinnati-First floor plan; typical ward building.

the x-ray department, with photographic rooms and dark rooms.

At the east end of the building a section is devoted to the use of the students. Here is a large amphitheater to be used as a lecture and demonstration room, with rooms for the reception and treatment of patients, and a lounging room and lunch room for students. This section of the building is cut off entirely from the operating portion of the pavilion, there being no communication between the two.

On this central axis of the group and west of the operating pavilion are placed the kitchen and dining hall. They will be almost in the exact center of the completed group, and are well located to serve the various wards. This building has a basement and one story. In the basement are located the storekeeper's office and rea special diet kitchen is located. Here the nurses will be trained in the scientific preparation of foods, and here the special diets will be prepared.

On Eden avenue, on the west front of the site, are located the laundry and power house. The lower story of this building is on the level of Eden avenue. The second floor is on the level of the tunnels or passageways that lead down from the group of ward buildings.

In the boiler room provision has been made for a battery of twelve boilers, six of which are now installed. These are "B. & W." water tube boilers of 260-horsepower capacity each. In the wing running eastwardly from the boiler room is the main engine room, and the equipment in this room will consist of three units of Corliss high-speed engines, directly connected with 250-K. W. generators. In this room will be located also the switch-

board, air compressor, and the refrigerating machinery. Electrical current will be used for all light and power throughout the group of buildings.

The refrigerating machinery will have circulating lines carried to the cold storage rooms in the basement of the kitchen and to the ice-making tank in the same building, and carried also to the cold storage boxes required in connection with the pathologic building. It is not the intention to cool the small refrigerators in the various ward buildings with this system, and these small refrigerators throughout the group will be supplied with ice.

The air compressor located in the engine room will have supply lines carried to the various operating rooms, treatment rooms, etc. The lines will be carried also to the pathologic building, for use in the various laboratories, and to the laundry, to be used in connection with certain special laundry machinery requiring air pressure.

As a rule, all the elevators in the various buildings will be operated by electricity, supplied from the engine room, these elevators being arranged for push-button control. As far as possible, economy of operation and maintenance have been kept in view throughout this entire mechanical equipment.

In the second story of the power house is located the main laundry. This is divided into two parts, one part being for the care of the clothing of the patients and the other part for that of the officers, interns, and nurses. This laundry is thoroughly equipped with the most modern machinery, having large dry rooms, with rooms for the marking, sorting, and care of the linen, and ample toilet and rest rooms have been set aside for the help employed in this department.

On the second floor, above the engine room, are the machine shop, carpenter shop, paint shop, mattress shop, etc., all of which are properly equipped with machinery and supplies to care for the repair and maintenance of the buildings and equipment.

Directly east of the power and laundry building, and on the line of the main covered passage-way leading from the wards, is located a small building with basement and one story. The basement, being on the level of the main covered way leading to the laundry, is given over entirely to the storage and care of the linen. The first floor is the dormitory for the male help employed about the institution. This floor is given up mainly to bed rooms, and is equipped with generous toilet and bath rooms, and has also a large sitting or recreation room for the occupants.

On the low ground north of the male dormitory, and connected at right angles with the main cov-

ered way leading from the wards to the power house, is located what is known as the pathologic building. This building has a basement and five floors. It will be given up almost entirely to research work and to the use of the student body connected with the institution. In the basement are located the refrigerators for the care of bodies, and a room has been provided for the coroner and undertaker, and also a room where autopsies may be performed.

At the north end of the building on the first floor is the chapel, where funeral services may be held, and connected with this chapel private rooms, with toilets, for the minister and for relatives and friends have been provided. The balance of the first floor is given up to the offices of the professor in charge, and here will be located also the library, reading room, and private laboratories. The second, third and fourth floors are mainly used for laboratories for research work. Special rooms have been provided for photographic and microscopic work.

At the north end of the building, over the chapel, is an amphitheater or lecture hall for the use of the students, and above this, on the fourth floor, a large space has been set aside for a museum. The fifth floor is built above the general roof level, and is divided into a number of small rooms and yards for the care of animals. On this floor are the feed room, store rooms, and the animal operating and sterilizing rooms. The work to be carried on in this building will be of the greatest scientific value, and will be under the direction of Dr. Paul G. Woolley.

West of the pathologic building is a small onestory building known as the detention ward. The name sufficiently describes its purpose. It is divided into four small hospital units, each unit consisting of a room for the patient, a room for the nurse, a small kitchen and duty room, and a toilet and bath room. Separating these units are open air corridors, in connection with which bath and dressing rooms for both incoming and outgoing patients have been provided.

North of the power house and facing on Eden avenue are two small buildings. One of these, now being used as a temporary power house for the contagious group, will be remodeled and used for a disinfecting station. The other is a small building known as the stable and garage, where the ambulances will be kept, and also all vehicles and tools of every description used in connection with the hospital service or in the care of the grounds. In this building bed rooms and bath and sitting rooms have been provided for the interns who may be on duty in connection with the ambulance service. It also has a small repair

shop designed for the care and maintenance of the automobile ambulances and other vehicles.

The nurses' home is located at the corner of Bethesda and Elland avenues, at the northeast corner of the grounds. This situation is retired and away from the noise of the traffic on the main thoroughfare. It has a basement, four stories, and a roof garden, and is connected through the covered passageways with all the wards and administration buildings, so that it will be possible for a nurse to go from the nurses' home to any building on the grounds entirely under cover.

This building occupies sloping ground, so that the rear portion of the basement is entirely above the grade. In this basement is located the office for the matron, with the mail boxes, telephones, and record boards. The rear part of the basement is given up to bed rooms for the servants employed about the house, while the front portion is used for the storage of trunks. This basement is provided also with a gymnasium and a small laundry, where the nurses will have the opportunity of caring for certain special articles of clothing should they so desire.

On the first floor is located the entrance hall, library, parlors, and dining rooms, together with the business office of the head nurse, and in the rear wing are the kitchen, storage rooms, and servants' dining rooms. As before mentioned, the nurses do not take their meals at the main dining hall, but the nurses' home is complete within itself for all living purposes. On the first floor several rooms are devoted to the educational work of the nurses. The library will be used for a lecture room, and here is located also a demonstration room, reading room, and a laboratory for the teaching of certain special work.

Above the first story the second, third, and fourth floors are used for sleeping rooms. Each sleeping floor has a large sitting room, used for the purpose of recreation by nurses. On the second floor private quarters for the head nurse and her assistants are provided. The suites will each have private baths and toilet rooms. A large general toilet and separate bath room is provided on each floor for the use of the nurses. On each floor is also a small room set aside to be used as a tea kitchen.

The roof of the building will be used as a roof garden, with a large inclosed shelter house over the central portion. Here it will be possible for the nurses to take recreation in the open air at any time, and where they may appear *en deshabille* should they so desire.

The sheltered portion of the roof garden will be used also for those who may desire to sleep in the open air. In this building great attention has been given to the comfort and well-being of the nurses, so that it will be in the truest sense a home, where rest and recreation as well as instruction may be had.

West of the nurses' home, and facing on Bethesda avenue, is a building used as a female dormitory. Here will be housed the female servants, stenographers, telephone operators, and all women employed around the institution, except the nurses. In its main features this building is a duplicate of the nurses' home, except no kitchen or dining room is provided, as the occupants of this structure will be required to take their meals in the main dining hall building. The various floors in the building are given up to bed rooms, and each floor is provided with a large sitting or recreation room, and in this building is also a private suite with bath for the housekeeper.

The equipment of this hospital will be of the most modern type and of the best possible quality. In each ward a signal system has been installed by which each bed is connected directly with the head nurse's station, and signals are registered by means of flashing lamps.

The matter of the disposal of garbage and waste of every kind has been carefully studied. In each ward kitchen, and at convenient locations in all other buildings, gas incinerators are placed, so that all waste material of whatever nature can be immediately destroyed at its source. In the power house is a large crematory, where bulky waste material may be disposed of.

There are many features of construction and equipment worthy of notice that cannot be described in a brief article such as this, but it is certain that the results achieved will make this institution one of the notable hospitals of the world.

The commission, under the leadership of Dr. Holmes, has given years of unselfish service to this work without compensation. Every detail has been given the most careful and painstaking study and the completed work stands as an enduring monument to their fidelity and wisdom.

The Mote in a Brother's Eye.

When we asked for legislation last winter, did you feel the kick? In the last general election the physicians shaped Kansas history; but we failed to get protective legislation for the people. We were not trusted. It was believed by too many that we were covertly seeking our own advantage. We were not, but the result was the same; instead of a beneficent law, we got the laugh of sectarians, quacks, and fakers. Why were we flouted? Because the petition we presented was soiled by our own hands, which were not lifted against the patent medicine orgy. We essayed rather to pluck the mote out of a brother's eye.—Paragraph from an address by Dr. Noah Hayes, of Seneca, Kan., on "Irresponsible Medicine."

PLANNING FOR PRIVATE PATIENTS.

Hospitals for Paying Patients Exclusively Not Desirable—The Consideration Due to Private Patients—Architectural and Administrative Requirements.

BY S. S. GOLDWATER, M. D.

SUPERINTENDENT MT. SINAI HOSPITAL; MUNICIPAL EXPERT IN HOSPITAL CONSTRUCTION IN THE DEPARTMENT OF BELLEVUE AND ALLIED HOSPITALS OF THE CITY OF NEW YORK.

ONE of the problems that must be faced in the planning of nonmunicipal hospitals in this country is the provision of suitable accommodations for private patients. In a sense, this problem is peculiarly American. English writers on hospital construction have hitherto ignored the problem, and properly so, because its consideration would have had no practical interest in a country where general hospitals, whether supported by the state or by voluntary contributions, have thus far, with rare exceptions, concerned themselves wholly with the care of nonpaying patients.

The planning of establishments for the exclusive care of paying patients is a subject which will not be dealt with in the present article. The omission of this problem is intentional, for the writer is opposed in principle to the maintenance of strictly private hospitals, or what in England would be termed "nursing homes." It is conceded that conditions may exist in certain localities that necessitate the temporary establishment of hospitals of this type, but such conditions must be regarded as abnormal and as contrary to the best interests of the community. The need for the private hospital does not exist where there is a hospital system in which the hospital unit is a complete general hospital, designed for the care of all social and all medical classes, and equipped with the varied and costly means of combating disease which are today essential to hospital efficiency, and which are entirely beyond the reach of private nursing homes.

In order to appreciate the difference between what can be done for private patients in hospitals of a strictly private character, and in general hospitals which conduct departments for private patients, one need only compare one of the better private hospitals in New York City with the private pavilion of a representative general hospital. The difference between the clinical, scientific, and nursing resources of the two is striking, and leads to the conclusion that, if one wishes to plan in the best possible way for private patients, he will not plan a strictly private hospital at all. The problem presented is, therefore, that of planning for private patients in a hospital which treats all social classes.

In planning for private patients in a general

hospital it is proper to consider the reasons of policy which prompt hospital trustees to make provision for this class of patients. Voluntary hospitals are established, in the main, for philanthropic purposes. If so, why devote to the care of patients who are able to pay their way any part of the capital, energy, and attention which are available? Why not permit such patients to shift for themselves?

In reality the care of private patients in benevolent institutions is entirely consistent with the purpose of such institutions. In the first place, if the private patients' department is planned with due consideration of the kind and quantity of support that is likely to be given to it, it becomes not only self-supporting, but it may be so administered as to yield a profit, and the surplus thus earned can be devoted to charity. To be sure, this argument, nakedly applied, might be held to justify any sort of profitable business undertaking as a hospital side-line. But the whole argument has not been stated. While it is true that departments for paying patients may be made self-supporting or even profit-yielding, it is not solely or mainly for this reason that such departments are included in general hospital plants. The failure of such departments to support themselves might justify their exclusion on financial grounds, but the mere fact that they are profitable does not justify their presence, although it makes their existence consistent with sound business administration. It is the indirect rather than the direct returns from departments for paying patients which, in the main, justify their presence in general hospitals. The experience of hospital administrators tells them that by means of private departments persons of large means have frequently been brought into contact with the hospital for the first time, and that knowledge of the beneficent character of the institution thus gained has led to large donations for the support of its charitable work.

Again, if the members of the attending staff are enabled to care in a single establishment not only for patients to whom their services are given gratuitously, but also for paying patients, the saving in time and energy which results brings advantages to their poorer patients. Doctors, like everybody else, are obliged to live on twenty-

four hours a day, and, if their patients are scattered throughout the city, the amount of time which they can spare for gratuitous hospital service is necessarily restricted. Place all their patients, of whatever social class, under one roof, and the poorer patients will receive a more generous allowance of time and attention than would otherwise be possible.

Furthermore, it is by no means an accident that, taken as a class, hospitals which care for both paying and non-paying patients are better built, better equipped, and better organized than hospitals whose work is wholly charitable. The presence of exacting private patients stimulates efforts to discover the best way of doing things regardless of cost, and, while cost cannot be excluded from consideration in the care of patients who do not pay their way, there is nevertheless, in a given hospital, a tendency toward the creation of a single standard of surgical technic, of therapy, and even of nursing care. And so, to an extent which varies with the resources and the benevolence of the hospital, ward patients in a socially mixed hospital profit by modes of treatment and care the discovery and application of which are superinduced by the presence of private patients.

Another benefit which general hospitals derive from the presence of private patients is to be found in the opportunity which is thus afforded to round out the training of pupil nurses. Nurses are, or should be, trained for work among all social classes. Those who aim at private nursing rather than institutional careers require, as part of their pre-graduation experience, contact with patients of the class by which they will be chiefly employed after graduation. In this sense the training of pupil nurses in hospitals where private patients are not cared for is incomplete and unsatisfactory. Conversely, the training of nurses for work in the tenements, etc., is quite impossible in a strictly private hospital.

The most important of all considerations which may reasonably determine the inclusion of a department for private patients in a general hospital is the fact that it is practically impossible, from the standpoint of expense, organization, and management, to provide in a strictly private hospital all of those means of scientific investigation and of therapy which can be provided on an economical basis only in a large institution, where the unit cost of a given utility is reduced by the large area covered. It is only a large hospital that can command the services of highly trained pathologists and of other special workers whose cooperation in the treatment of the sick has become indispensable to efficiency. Therefore the wish to

deal fairly with the rich as well as with the poor commands provision for the care of private patients in general hospitals. By omitting such provision a community places itself in the attitude of offering to the poor opportunities for the restoration of health which are denied to the well-to-do.

In the classification of hospital patients from a social standpoint the first broad distinction to be made is that between paying patients and non-paying patients. This article deals with the former group, but not with the latter. In hospital administration the necessity arises of subdividing paying patients into two classes—namely, those who are able to afford treatment in private rooms, and those who cannot afford the superior comfort of single rooms, and who must content themselves with the semi-privacy of intermediate wards.

Semi-private or intermediate wards may be wards of 2, 4, 6, or more beds. Patients who seek this class of accommodation expect that some distinction will be made between the privileges accorded them and those which are granted to the occupants of beds in the public wards; but the principles of ward planning which are applicable to intermediate wards do not differ essentially from tsose which govern the layout of public wards.

It is important to remember in this connection that the semi-private patient is drawn from the middle or lower middle class. As a rule, such patients pay from \$10 to \$20 per week. It would be a mistake, therefore, to provide for them accommodations so elaborate as to require an outlay for maintenance of \$4 or \$5 per day. Hospitals have established and have abandoned intermediate wards because of initial blunders in planning. In one instance semi-private wards were included in an elaborate pavilion designed primarly for occupancy by persons of the wellto-do class. The diet supplied to the intermediate patients and their treatment in general were on a par with those of occupants of expensive rooms, the sole distinction between the private and semiprivate patient being that the former occupied a single room, while the latter shared a small ward with one or two other patients. Within a short time it was found that the semi-private patients were costing the hospital more than they paid. The privileges of the semi-private patients were then restricted, and an attempt was made to substitute a more economical form of service, somewhat akin to the service provided for ward patients generally. Great dissatisfaction resulted, and ultimately the hospital, stung by the unreasonableness and ingratitude of its semi-private patients, abandoned the department entirely.

This unfortunate outcome was the result of an initial mistake in planning. The semi-private patients should not have been placed where and as they were; they should not have been encouraged, as they undoubtedly were, to compare themselves with private room patients, to their own disadvantage. Their surroundings should have suggested to them the comparison of their lot with that of the ordinary ward patient. The semi-private patient who observes that he is being treated somewhat better than his less fortunate nonpaying or part-paying neighbor is pleased with his good fortune; on the other hand, the patient whose attention is drawn to the fact that his treatment is not quite so fine as that of his neighbor is made unhappy by the comparison. Hence semi-private patients should not be placed too close to private patients. Their diet service should be arranged, preferably, in connection with the diet service of the wards. Where the hospital has two entrances, one for ward patients and another for private patients, the former entrance, rather than the latter, should be used by semi-private patients. If a distinct building or department cannot be provided for semi-private patients, and if these patients must be grouped with either private patients or ward patients, the latter arrangement should be chosen.

In distributing the patients of a general hospital, the sexes are, of course, segregated as far as ward service is concerned, and in the larger and better regulated hospitals distinct allotments of space are made to surgical cases, to medical cases, and to the various special clinical departments. So elaborate a classification is not feasible in the private patients' department of a general hospital. Not long ago, in the planning of a hospital which promises to become one of the most notable general hospitals in America, the preliminary studies showed a building for male private cases and another for female private patients; in each building surgical cases were to be cared for on one floor and medical cases on another. The plan was perfectly symmetrical, but, from an administrative standpoint, impossible. When it was pointed out that the proportion of male and female cases would change from time to time, and that the demand for rooms for medical patients would seldom, if ever, equal the demand for surgical cases, the plan was abandoned, and arrangements were made to care for any kind of patient in any room at any time, thus rendering possible the maximum use of the plant at all times. The only change of plan required was the provision of toilet accommodations for both male and female patients on each floor of each building.

The proper location, in a general hospital, of

children of the private class is a debatable question. Where no special provision for small children is made, complications arise. A crying child is an objectionable neighbor to the adult hospital patient, and therefore cannot conveniently be accommodated in the average private room. which, despite precautions, is not quite soundproof. Wherever possible, it is therefore desirable to make special provision for infants and for children of tender age apart from adult patients, and preferably in proximity to the children's building or children's ward. Some of the rooms should be large enough to accommodate mother and child; others may be arranged with a mother's room and bath between each pair of children's or infants' rooms. In a children's hospital recently constructed, there is an adult bath connected with each private room, which provision, while evidencing a thoughtful appreciation of the special needs of a private hospital for children, is extravagant.

The adult private patient who enters the hospital is only occasionally accompanied by a member of his family. Some provision for guests must nevertheless be made in any hospital which accommodates a considerable number of private patients. The equipment of a guest room need not be essentially different from that of a room intended for a patient, and where suites of rooms and private baths are provided there is no difficulty about accommodating a member of the patient's family as a paying guest of the hospital.

The suggestion that accommodations for children of the private class be arranged apart from the general private building or private corridor, and in connection with the hospital's pediatric department, brings up a fundamental question in hospital planning. It has already been stated that children should be separated from adult private patients, because they are or may be objectionable neighbors to sensitive adults. Another reason which applies is that the special equipment of a children's hospital (infants' baths, milk preparation room, wet nurses' rooms, etc.) should be available, without duplication of plant, for the care of paying children as well as for that of children treated gratuitously. To the pediatrician the proposed arrangement will be particularly grateful because it will concentrate all his patients, both public and private, in a single locality, an arrangement which to him represents a maximum of convenience. We must consider whether the principle here involved is not susceptible of wider application; for if the convenience of the pediatrician and the welfare of his patients are thus served, does not the same argument apply to patients and doctors of other classes? For example, would not the surgeon in a large general hospital welcome the placing of all his private and ward patients in close proximity to each other, and might not the patients themselves benefit by such proximity? And does not the same hold true of medical cases, of gnyecological cases, of neurological cases, etc.?

The question just propounded is not of mere theoretical interest. In preparing the plans for a general hospital the architect consulted the heads of various clinical departments as to their preferences, and each one proposed precisely such an arrangement as has just been described. When the plans were submitted to the writer it was noticed that the hospital was not divided into departments for public and private patients, but into departments of medicine, of surgery, of gynecology, etc., in each of which there was included both public and private patients. The visiting staff argued that such an arrangement would enable them to conserve their time, an argument which could not be gainsaid. On the other hand, it was obvious that it would be extremely awkward to the management if, at any given time, the surgical rooms being fully occupied, and the medical rooms being half occupied, a surgical patient should apply for admission to the hospital. A patient belonging to the surgical staff could not be accommodated in the medical wing without infringing the rights of the medical Furthermore, the medical wing was planned in such a way that its relation to the operating rooms, etc., was not favorable to its use for surgical cases.

Again, if the grouping proposed by the staff were adopted, there would have been no distinctive entrance and reception room for private patients and their visitors; contact with ward patients and with the visitors of ward patients would have been unavoidable. Furthermore, the dietary service of private and ward patients would have become confused, and the concentration of the trays of all private patients at a single headquarters, and their supervision by a single competent person, would have been impossible. These considerations led to the abandonment of the plan, and to the substitution of the scheme more commonly followed-namely, the concentration of all of the adult private patients of the hospital in a single center. The architect, however, was urged not to forget the principle involved in the suggestion made by the physicians that all of the patients of each man be grouped in a single locality. In other words, while in the modified plan private and ward patients were housed distinctly and separately, the main surgical plant, for greater convenience, was located midway between surgical

wards and private rooms; and with the same idea of double service in mind, the department of roentgenology, the cystoscopy room, the dark room for throat work, the rooms for electrotherapy and hydrotherapy, the delivery or obstetrical room, the nursery for the new-born, etc., were made accessible from both public and private departments. In this way convenience was consulted, while duplication of plant was avoided.

Unless the hospital is a very large one, the use of a single surgical center, as in the hospital just referred to, is desirable. Where, however, the number of private patients exceeds 50, a separate surgical plant is consistent with reasonable economy of administration. It is important to bear in mind that operating rooms occasionally require renovation. If, therefore, the private pavilion with its operating plant is wholly divorced from the general hospital plant, and if the surgical center of the main hospital is not comfortably near the private rooms, awkwardness will result when the private operating plant is undergoing renovation. For this reason it is preferable, even when special rooms are set apart for the surgical treatment of private patients, to place such rooms in proximity to the main surgical center, so that the two groups of rooms may be used interchangeably when necessary.

In some hospitals only staff surgeons are permitted to operate on ward patients, while the use of the private plant is open to the profession generally. In such hospitals the regular house staff may assist surgeons who are nonmembers of the staff, or the latter may be obliged to furnish their own assistants. In a hospital where the latter system prevails it is especially desirable to provide separate operating rooms for private patients.

The larger the number of visiting surgeons concerned in the treatment of a given number of surgical cases, the greater the number of operating rooms required. One active surgeon may be able to dispose of six or eight cases in succession in one room at a single session. The same number of cases, operated on by six or eight different men, would require at least one extra room. The administrative system is therefore a factor in determining the number of operating rooms.

The organization of the house staff has an important bearing on the location and grouping of operating rooms. In staff hospitals, where all of the surgical work is done by the regular visiting staff, assisted by the regular house staff, a single operating center is clearly indicated. If the private patients' service is large enough to justify the assignment of a special group of residents to that department, separate operating rooms become practicable from this standpoint. A hos-

pital plan for private patients, therefore, may presuppose a single group of residents serving all departments of the hospital, or a double group of residents, one group serving the private patients' department and another the wards. In general terms, it may be stated that, if the number of private patients in a general hospital exceeds 50, and if the number of ward patients is such as to require all or nearly all of the time and attention of a group of interns as ordinarily organized, it is best to assume, in planning the hospital, that the private patients will sooner or later come under the care of a separate group of resident officers. This assumption would affect the location of the operating rooms and the number and location of interns' rooms. Other things being equal, it is desirable to place the interns in a single building. close to the administrative center; their quarters should not be distant from the wards which they serve, but should at least be far enough away to give them a sense of freedom when off duty. In a very large hospital, with a private pavilion relatively remote from the administrative center, it may be desirable to make provision for the housing of the residents who are to care for the private patients, quite apart from that of the interns whose duty lies in the wards. Private patients are most exacting in demanding the prompt attendance of the residents, and trouble will be avoided if the latter are so placed that they may respond promptly and conveniently to patient's calls.

Hospitals which offer the use of their facilities to private patients for minor operations, without requiring such patients to engage private rooms, should provide recovery or rest rooms for temporary use. This is particularly important in the case of hospitals which are very busy and which have no spare rooms that can be utilized for this purpose. Nowadays private patients come to hospitals not only for minor surgical operations, but for special examinations of the bladder, stomach, and other organs. These inspections and examinations are often exhausting, and after the ordeal the patient may require rest for several hours.

In general hospitals which conduct training schools for nurses the nursing in the private department is for the most part intrusted to pupil nurses. These nurses in training are, or should be, under the supervision of graduates, and both pupils and graduates should be housed in the nurses' home, and not in the private patients' building. The use of "special" nurses who are nonresidents of the hospital, however, is very common. Fifty private patients may employ, in addition to the regular staff of pupil and graduate nurses, from thirty to sixty special nurses, count-

ing both the day and the night force. For these "specials" suitable provision must be made in the way of locker and dressing rooms. A central locker and dressing room for their use may be placed either in the nurses' home, to which these nurses must repair for their meals, or, if the nurses' home be distant and crowded, locker and dressing rooms can often be provided in the basement of the private pavilion. This room should be spacious, and should have the customary toilet accommodations.

Where special nurses are employed in great numbers it is also desirable to provide places where they may assemble when they are excluded from their patients' rooms. It is not an infrequent thing to find, on a floor accommodating 16 private patients, five or six special nurses who must remain on the floor, subject to call, but whose presence is not desired in the rooms of patients who are receiving visitors. If a retiring room is not provided for these special nurses, they are forced to gather in the corridor, where, despite all rules and regulations, they will annoy nearby patients.

It is only in the most elaborately constructed private hospitals that special toilet accommodations are provided for nurses on floor duty. Such provision is everywhere regarded as a necessity in connection with ward service, but the need is doubtful in a private pavilion, where the general toilet accommodations are used only by a limited number of convalescent private patients or by visitors of the better class.

The administrative headquarters for the private patients' department demands consideration at the hands of the hospital architect. In a moderate-sized hospital it is impracticable to have more than one administrative center. The general offices serve for all departments of the hospital; here all accounts are kept, and here all moneys are received and all payments to special nurses, etc., are made. It is only in the very largest hospitals that a separate office and office force for the private department can be thought of. Assuming, then, that in the ordinary hospital a single administrative headquarters will suffice, this must be so placed as to be accessible to private patients and to their visitors, and it should be possible for visitors to the private department to proceed to the general office of the hospital without passing through wards or ward corridors.

A separate entrance for private patients and for the visitors of private patients cannot always be provided in hospitals of moderate size; it should be regarded as indispensable in a hospital where the private service assumes great proportions.

The visiting staff require a coat room and perhaps a private consultation room. Whether the central coat and locker room of the regular staff will serve the purpose, depends on the size of the regular staff, the number of medical men privileged to treat patients in the private department, and the relative location of the several entrances.

Private patients are sometimes brought to the hospital in an ambulance. The general ambulance entrance of the hospital will suffice for the admission of private ambulance cases, provided it is so placed that patients admitted through this entrance can be taken to their rooms without a long journey through the general corridors of the hospital; otherwise a separate ambulance entrance, guarded from public view, should be provided for private patients.

Adjoining the private patients' entrance, or, if there be no such entrance, adjoining the general entrance of the hospital, a reception room should be provided for visitors to private patients. It must be borne in mind that the number of visitors to a given number of private patients is in excess of the number visiting an equal number of ward patients, and accommodations must be calculated accordingly. A reception or sitting room for general use on each floor of a large private hospital is a luxury which only some hospitals can afford. The need for it is less pressing in those hospitals which have ample balcony space and roof space for convalescents and their friends than in those which are not so equipped, and the value of such a room is in direct proportion to the number of rooms on a floor or the number included in a nursing unit. A small section of expanded corridor will often serve this purpose.

Aside from the general reception room, it is well to provide a small, soundproof private waiting or consultation room, where the relatives of a patient can meet at times of great anxiety, and where unpleasant news can be imparted to them without causing distress to other visitors.

Hospitals which are called on to accommodate any considerable number of guests who are not patients will do well to provide a dining room for these guests. Such a dining room may be used not only for guests, but also for convalescent patients.

Ample telephone service should be provided in connection with the private pavilion. This service will be used in large part by persons who wish to talk privately, and booths should be provided for their use. As far as possible, separate wires should be provided for sending purposes in private hospitals, so that guests may use this service freely without monopolizing the hospital's own telephone lines, which should be kept open as

much as possible for calls and inquiries from the outside world.

Extension telephones connected with the city service are not infrequently provided in patients' rooms. This arrangement is not desirable, and will not always be tolerated by the visiting staff. It is wise, however, to arrange an optional connection for a portable instrument in each room, so that a telephone may be installed in any special instance where the circumstances warrant it.

A separate kitchen for private patients signifies better service, but it is not economical in a comparatively small hospital. As a rule, the staff is allowed greater freedom in ordering special diets for private patients than in ordering such diets for ward patients. The special diet kitchen, therefore, should be in proximity to the private patients' rooms.

It is most unsatisfactory to prepare private patients' trays and ward trays in the same serving room. Confusion often results, and the necessary double standard is maintained with difficulty; so that, even where both private and ward patients are supplied from the same kitchen, separate serving rooms are indispensable.

If private patients are cared for on a number of different floors of the same building, the question will arise whether the trays for all these floors should be prepared in a common center, or whether the food as it comes in bulk from the kitchen should be distributed to serving rooms on each of the several floors. In the latter case the preparation of the tray is intrusted to individual nurses (each nurse serving her special patient or special group of patients), or to the supervising floor nurse, who is responsible for the preparation of all the trays on her floor. Nurses necessarily differ in their ability to do this work, and uniform standards cannot be maintained where private patients' trays are prepared in a number of different rooms. A plan which has been found to work is to provide a well-equipped serving room in a central location in the private pavilion. The closer this room is to the kitchen where the food is cooked the better, but proximity to the serving rooms of the private corridor is essential. In other words, if we must choose between placing such a room either close to the kitchen or close to the private rooms, the latter choice must be made; the ideal location for the serving room is close to both kitchen and patients' rooms.

If all the patients' trays are prepared in a central serving room, electric food-lifts must connect this room with the serving rooms on the several floors. A better arrangement is to replace the customary small dumbwaiter by a good-sized freight elevator, upon which a portable tray-rack,

large enough to take all the trays for one floor, can be placed.

As a rule, the allowance of linens to private patients is from three to five times as great as the allowance to ward patients. This must be remembered in planning linen closets. Besides the spacious linen closet on each floor, controlled by the floor nurse, there should be, in a large private pavilion, a central linen room, under the control of the head nurse or housekeeper, where a reserve supply can be kept for emergency use. The demand for linens in a private pavilion varies greatly from day to day and from week to week, and it is of the utmost importance that a reserve supply be kept within reach, where it can be drawn on promptly without roundabout resort to the central linen room of the hospital.

On each floor there should be provided a cleaner's closet, preferably with direct ventilation. Provision must be made also for wheel chairs, stretchers, ladders, etc. The corridor or other space required for wheel chairs will be relatively great where the rooms are small, and vice versa.

The passenger elevator service must be so arranged that patients can be transported from their rooms to the operating room with as little exposure as possible. Separate elevators for passenger service and freight service are desirable. Under ideal conditions the passenger service will be divided into service for the public and service for patients; but so liberal a supply of elevators will not ordinarily be feasible, and the next best thing is to inclose the elevator shaft, and to protect the single available elevator car in such a way that it will be suitable for the transportation of patients. A cut-off lobby in front of the elevator door will prevent elevator noises from disturbing patients. In any event, the elevator should not be placed opposite to or near the door of a patient's room, nor should stairways be so located. It is unwise to finish a hospital elevator in white enamel, or to cover the floor of the car with costly material, such as rubber tile, which under heavy use wears out in two or three years. The body of the car may be handsomely and durably finished in electro-plate, and a marble-mosaic or terrazzo floor will cost less to install than rubber tile, can be easily cleaned, and will outlast a dozen rubber floors.

If a building of many stories has but a single elevator, the hospital will find itself in distress when the elevator is undergoing repairs and is out of commission. Having this need in mind, and remembering also the question of fire and panic risk, it is desirable, in the case of many-storied building, to provide a horizontal corridor or bridge connecting each floor with the corre-

sponding floor of an adjacent building. If the private patients' building has no such means of communication with the general hospital, the emergencies of fire, panic, and machinery breakdown cannot be met with the same facility, safety, or satisfaction. A detail sometimes overlooked is the proper warming of the elevator shaft.

Hospitals which are particular to observe all the rules of hygiene in planning their wards often neglect these rules in planning private corridors; thus corridors are completely surrounded by rooms, without any direct exposure of the corridor to light and air. Such a hospital cannot be healthful. In Prussia a state regulation compels hospitals to leave their corridors exposed on one side, which results in an extremely costly building. While it is unnecessary to leave the corridor exposed in its entirety on one side, it is of the utmost importance that a corridor shall be open to the outer air at two or more points, so that thorough, direct ventilation may be assured. If the corridor is a very long one, an opening at either end, with the omission of a room, to provide an air inlet at the center, may suffice. The break at the middle is not so important where the length of the corridor is not great.

The use of separate day rooms for convalescents is not so important in connection with private rooms as it is in connection with general wards. The private patient, occupying his own room, is not hampered in any way by his neighbors, and when convalescing is not exposed, like the convalescent in a large hospital ward, to conditions unfavorable to comfort and health. Any private room, suitably located, may be converted into a well-aired and properly lighted day room or lounging room for convalescent use. Convalescent patients, however, are not happy if they are room-bound, and therefore balconies and gardens, or roof-gardens, should be provided for their recreation. Since there is no reason why private patients as well as ward patients should not be treated out-of-doors in suitable cases, balcony and roof provision should be ample. A balcony which faces south is infinitely more valuable than one facing north, but the balcony which robs rooms or wards of sunlight is a doubtful blessing. Private balconies, connected with single rooms or with expensive suites, constitute a luxurious and desirable feature of recently constructed hospitals.

On the roof of a private pavilion it is desirable to provide separate lounging or sun rooms for men and for women, so that male convalescents who choose to do so may smoke without annoying other patients. Toilet accommodations should be provided for both sexes, and, in general terms, the roof space may be so arranged that one-third

of it is covered with a permanent shelter (not glass), and perhaps protected on north, east, and west, but quite open toward the south, while the remainder of the roof is open to the sun. Where a semi-protected shelter is built, it should be so constructed that all sides may be opened in summer. A common mistake is to inclose and protect too much of the roof space; when this is done, the roof fails to give the best possible service.

The number of private rooms to be included in a single group or nursing station should not be less than twelve or more than eighteen. If the number exceeds eighteen, adequate supervision by one floor nurse will be found to be impossible, and a single set of service rooms will not give complete service. A very long private corridor has an institutional look which is not agreeable to persons of refinement. If the number of rooms is less than twelve, the cost of construction in proportion to the number of beds is high, because the accessory rooms required for a six- or eightroom group is the same as that required for a sixteen-room group. Not long ago a hospital received a gift of \$50,000, with the stipulation that the money was to be used for the construction of a three-story private pavilion, having eight rooms on each floor. The matter was brought to the notice of the writer, who after a conference with the donor succeeded in having the terms of the gift modified, with the result that a two-story building, with fourteen rooms on each floor, was substituted. The administrative advantage of change will be obvious to those who are familiar with hospital usage.

The accessory rooms which must be planned in connection with a group of private rooms are approximately the same as those required in connection with an ordinary hospital ward. Apart from the chief or central serving room referred to above, there should be a small serving or tea room on each floor, similar to that ordinarily found in hospital wards. The refrigerator should be of unusual size, in order to accommodate the special beverages, etc., that private patients frequently provide for themselves. While incinerators are coming into common use in ward construction, the use of an incinerator in a private corridor, where many special nurses are employed, and where the discipline is not so good as in a ward employing pupil nurses, involves a danger to property which must be considered. In a busy private hospital garbage-pail inspection is a valuable check on waste, and this means of checking waste is largely destroyed when incinerators are scattered through the building.

The chart and medicine room may be a room apart, or it may be located in a semi-isolated

alcove off the main corridor. If the corridor is very long, the ventilated middle space referred to above may be utilized for this purpose, but not unless a more isolated room is provided as a lounging space for the special nurses. In other words, in the absence of a retiring room for the special nurses, the corridor or the chart room is a place where they will often gather, and, if the chart room is merely a section of the open corridor, the noise made by the nurses at this point will annoy neighboring patients. Toilet accommodations for both sexes and at least one portable bath must be provided for general use on each floor apart from toilets and baths in connection with individual rooms. Signal buttons should be installed in all baths and toilets.

The number of private toilets will depend on the grade of service. Where the hospital clinetele is of the richer class, private baths and private toilets may reasonably be provided in greater number than otherwise. An attachment for flushing bed-pans will add to the usefulness of a private water-closet. There is comparatively little use for private baths in connection with the treatment of the acutely sick. As a rule, private patients, a majority of whom enter the hospital for surgical treatment, have no use for private baths. It is a mistake, therefore, to provide, as is sometimes done, as many as four or six private baths for a group of twelve or fourteen rooms. Two private baths on a floor will usually suffice, and the space gained by the omission of the remainder can be used to advantage, either by increasing the size of patients' rooms, or by increasing the number of rooms on the floor.

On each floor, or connected with each group of rooms, there should be provided a sink-room and a room where the sterilization of instruments and utensils can be carried out. The sinks should be placed near a window, and should not be visible from the corridor. A pleasant arrangement of these rooms is to place the sterilizing apparatus, and perhaps a lavatory, in an anteroom, and the bed-pan sinks, hidden from corridor view, in an alcove, with a separate window. It is bad practice to compel nurses to empty bed-pans in the common water-closets, or even in a sink located in an ante-room to the public water-closet.

There should also be a drying closet and blanket warmer, and a ventilated specimen closet. One or two lavatories on a floor, accessible to the visiting doctors, will save fetching and carrying on the part of the nurses, and will tend to improve the nursing service. A table and sink for the preparation of flowers, and shelves in a ventilated place for their care over night are desirable.

There should be a ventilated closet for soiled

clothes. The use of clothes chutes is optional; they save labor and destroy linen. Sanitary chutes can now be made of stock sectional material, and are less expensive than formerly. Top ventilation, tight doors, and flushing attachments should not be omitted.

It is important to bear in mind the relation between the various service rooms and the patients' rooms. The distance between the serving room, sink room, sterilizing room, chart room, and the most distant patient's room should be reduced to a minimum. As previously stated, service rooms should be duplicated on the floors of very large buildings. The several service rooms should not be strung out along the corridor, so that each of them faces a patient's room and thus constitutes a source of annoyance to the nearest patient. It is far better to group them centrally about a small side corridor running at right angles to the main corridor. Such a plan, on the recommendation of the writer, has been adopted in the private patients' corridor at Barnes Hospital, St. Louis, and in a modified form at the Magee Hospital, Pittsburg. In the Stamford Hospital, at Stamford, Conn., all the service rooms are collected at the focal point or crossing of a T-shaped building; the stairway and elevator are included in this central service grouping.

It is assumed that the stairways and elevator shafts will be entirely cut off, as required by law in some localities, and as indicated by the rules of hygiene, the requirements of safety, and by common sense.

Every room which is to be occupied by a patient should be so located that it will receive the direct rays of the sun during at least part of each day in the year.

From time to time delirious patients will have to be accommodated in private rooms. Bearing this in mind, it is desirable to provide soundproof partitions between rooms, and in some instances to provide double doors between the room and corridor. An excellent arrangement is to have a semi-isolated room on each floor at the extremity of the small service corridor which is referred to above. Such an arrangement is shown in the preliminary studies for a proposed psychopathic pavilion prepared under the writer's direction for the Society of the New York Hospital. This room, in other words, is placed at a point as remote as possible from the rooms occupied by the general run of patients.

Private baths should be so arranged that they may be used interchangeably either with the room on one side or the other. Connection between private room and private bath should not be direct, but should be indirect through a small

private hall or anteroom. The mistake has often been made of placing a private water-closet between two private rooms in such a way that its use by the occupant of either room inevitably attracts the attention of or causes annoyance to the patient in the adjoining room.

The size of private rooms depends on many factors. Legal requirements must be met in some localities. On hygienic grounds a private room occupied by a single patient should have a cubic content of not less than 1,000 feet, but private rooms are seldom planned with less than 120 feet of floor space or with less than 1,200 cubic feet. In many localities the custom exists of employing special nurses on twenty-four hour duty. This means that the room must hold, besides the bed and the furniture necessary to the patient's care, a couch for the nurse. More space will therefore be required for the furniture, and in addition to this, on hygienic grounds, the room must be larger than one which is planned for occupancy by a patient only. But whether a nurse is to sleep in the patient's room or not, it is well to remember that a nurse, attendant, or friend is likely to be in the room during a large part of the day, and the required air space should be calculated accordingly. The adoption of a minimum of 1,500 cubic feet for private rooms would be reasonably economical and safe.

The rates which private patients are likely to pay must to some extent determine the size of the rooms, above the minimum, which are provided for their occupancy. In small towns, where the prevailing rates are comparatively low, rooms must necessarily be restricted in size in order to make the private department profitable. larger cities, where many patients are willing to pay more liberally for hospital accommodations, rooms of larger size can be provided. Ten feet may be regarded as the minimum width of a private patient's room; in such a room a bed can be placed crosswise, and made accessible from both sides. In a narrower room the bed would necessarily be placed with its length along the wall of the room, with but one side accessible, and with resulting inconvenience to patient, doctor, and nurses. No room plan should be accepted which does not show the actual placing of all the furniture and the swing of doors, according to accurate measurement. The mistake is often made of building large closets, as in hotels and apartment houses. A patient's wardrobe is usually a comparatively small affair, and large built-in closets are not necessary. If a built-in closet is preferred, it should be of comparatively small size. There is no good reason, however, why an attractive portable wardrobe cannot be used.

The relation between door and window is important, and should be such as to permit a free circulation of air between window and corridor without creating a draught which will directly strike the patient. The door of the room should be broad enough to permit of the free passage not only of a stretcher, but of wheel chairs and of the bed itself. In addition to the ordinary full door, it is desirable to provide a screen-door or halfdoor. This may be entirely of wood, or may be a wooden frame filled out with muslin or other suitable material. Rubber bumpers or other sound-breaks should be provided for all doors. The transom light should not be made of clear glass, because it may be desired to darken a room while the corridor lights are burning.

Private rooms should be lighted by an indirect ceiling light, which should not be too cumbersome, and in addition there should be provided a side bracket. A receptacle for a portable lamp and for portable electrotherapeutic appliances should also be provided. The bell-cord should be permanently attached to the wall. The signal system should be of the modern type, which includes a lamp or annunciator in the chart room and a lamp over the patient's door. It is desirable to have also lights connected with this system in the sink room and in the serving room. Pushbuttons in the baths and water-closets have already been mentioned. One objection to the electric light or silent signal system is that a call from a room does not attract the attention of a floor nurse who happens to be engaged in the room of another patient. At night, with a single nurse on duty, this may be serious. This objection has led in many instances to the use of a lowsounding buzzer, or to the use of an annunciator or drop-signal, whose slight click is likely to be heard by the night floor nurse, wherever she may be. Loud bells are, of course, inadmissible.

To place running water in every room is to provide a utility and to court a danger. The danger is that the lavatory will be used for purposes for which a slop-sink only is suitable. In rare instances infections have been traced to this source.

Private hospitals should be screened against flies, and the windows of all rooms should be fitted for the attachment of locked metal screens or guards, which will be needed in emergencies.

Fireplaces add to the attractiveness of private rooms, and have value as ventilating flues. Artificial ventilating systems are not required to ventilate the patients' rooms of properly planned private hospitals. The value of exhaust ducts, and possibly of exhaust fans or other accelerating devices in connection with toilets, kitchens, sink rooms, etc., is obvious.

Vacuum cleaners are of limited use in hospital service. In wards their use is extremely limited, but in private rooms they are somewhat more serviceable. They are frequently installed for the purpose of cleaning the rugs which are found in private rooms. It is a question whether it is not better practice to have all of these rugs removed once a day to the basement or yard, there to be thoroughly cleaned. The use of the vacuum cleaner does not do away with the necessity for careful hand wiping of all exposed surfaces in private patients' rooms.

There should be available to the private patients' department a garbage destructor, a mattress sterilizing plant, and store rooms for extra mattresses, pillows, wheel-chairs, beds, rocking-chairs, cots, and cribs. A trunk room for the trunks of patients and guests should not be forgotten.

The reader may have noted the omission of any reference to surgical dressing rooms or examining rooms. Such rooms are rarely required on a private corridor. They are needed, however, in connection with semi-private or intermediate wards. For a particularly difficult or heavy surgical dressing, under anesthesia, a private room patient can nearly always be taken to the operating room floor, where the minor operating room can be used. As a rule, all necessary conveniences for a surgical dressing can be provided in a private room, where the dressing can be done with most comfort to the patient, without annoying or distressing other patients, and without inconveniencing other surgeons.

The principles of fireproof and sanitary construction which are applicable to hospitals generally should be observed in planning buildings for private patients, but their restatement here would add unduly to the length of this article.

Going Back to Hippocrates.

When the great Hippocrates appeared on the scene, Greece was studded with costly and beautiful shrines to Esculapius, the god of the healing art. He was apprehended as a destroying, yet appeasable, deity. Pestilence and death from an unseen cause, and the joy and beauty of health, were traced to him. Whatever happiness here or hereafter the worshiper aspired to, he sought it through maintaining the youthful vigor, symmetry, and beauty of the body; and social science and reforms of all kinds clearly indicate that we are fast returning to the old Greek reverence for the body being as sacred as the soul, whose temple it is.—Prologue to an address by Dr. Noah Hayes, of Seneca, Kan., on "Irresponsible Medicine."

Fabiola, a wealthy Roman lady, and probably the first Christian philanthropist, built a great hospital at Rome. She lived in the fifth century.

ADMISSION OF PATIENTS IN A SMALL GENERAL HOSPITAL.

Individual Care Made Possible by Small Number Admitted—Applicants for Free Beds Are Investigated to Avoid Pauperizing—Technic is Simple.

BY ELIZABETH GREENER,

SUPERINTENDENT HACKLEY HOSPITAL, MUSKEGON, MICH.

PAPER II.

In the management of a small hospital it is most essential that the keynote be that of simplicity of detail in every department rather than elaborate and unnecessarily involved methods built up on the more complicated lines of the larger hospitals.

One most important point to always bear in mind is the value of making a good first impression on the patient and his friends, and at no time is it more possible to create this much-to-be-desired feeling in their minds than at the moment of his admission to the institution as a patient. In the average large hospital a certain established routine must be followed, and as a result very

Before being admitted, every patient must be examined by a member of the medical staff of the hospital or by the house physician.

In nearly all cases patients applying to us for admission have been recommended by some member of the staff. We admit a large number of patients from adjoining small towns, but these cases are almost invariably referred by their home physician to some particular member of the staff whom he prefers to have attend to his case. When such patients are sent to us for operative measures, the physician referring the case is always invited to be present at the operation and usually assists.



Fig. 1. Hackley Hospital-Side and rear view.

frequently a newly admitted patient is made most uncomfortable, not to say unhappy, by the rigid enforcement of this very necessary routine.

In the small general hospital, however, where practically all of the better class of physicians in the city are represented on the staff, the admission of patients is naturally a much simpler process than in a large institution, or in one where patients voluntarily make application for admission in large numbers.

Our general rule for admisson is that all persons suffering from acute noncontagious diseases whose condition admits of cure or relief shall be eligible for admission. Insane patients or those suffering from incurable diseases may be admitted only by special permission from the Executive Board.

Patients making application to the hospital for free care are furnished with an application blank for free bed service (Fig. 2). This application is filled out by their physician, and must also bear the signature of some responsible citizen who is willing to guarantee that the applicant is worthy and really in need of this special help. The application is then referred to the Executive Committee of the Board of Trustees, and, if favorably considered, the patient and physician are immediately notified and the ambulance sent for the patient.

In cases of emergency, where it is not possible or advisable to await the action of the Executive Board before admitting a patient, the superintendent assumes the responsibility of admission. The free bed application in such case is filled out as soon as possible after admission, and the matter referred to the board for its official indorsement at its next meeting. No sick person applying for admission is ever turned away from our hospital. If, for instance, the case is one which does not properly belong to the hospital, but rather to the County Home, or if it is one for which the city or county should be responsible, the patient is admitted temporarily until the proper authorities can be notified and their instructions received.

Our regular ward rate is \$1.25 per day, and it frequently happens that, while a patient can pay a part of this amount, it would be out of the question for him to pay the full rate. In such cases, after investigating the patient's financial circumstances, home conditions, etc., we allow him a part free bed, arranging that he shall pay what-



Fig. 2. Hackley Hospital-Ambulance entrance.

ever amount seems just and fair, from \$1.00 per week up.

Should a free bed patient desire to retain the services of some special physician or surgeon on the staff, he is expected to pay at least a part of his hospital expenses. If on a full free bed, he is cared for by such members of the staff as are assigned for that time to the free bed service of the special department in which he has been placed. Each physician on our staff gives freely whatever service is required to the charity cases in his particular department.

We are most careful of the feelings of our free bed patients, and, except the physician and hospital authorities, no one knows which of the ward patients are occupying the so-called free beds, as we have no particular beds set aside for this purpose. We have often had free bed patients in private rooms, and in the case of very sick patients have assigned a special nurse when such a step appeared necessary.

We have also in connection with our institution a room with a special endowment for the benefit of the teachers of the public schools of the city of Muskegon. The fund for this purpose is the gift of a former resident of the city as a memorial to his father, and it has proved a great help and comfort to a large number of teachers, especially those who are a long distance from their own homes.

The arrangement of our ambulance service is rather unique and most satisfactory. One of the local firms in this city has established a special service for this work, and our hospital has a yearly contract with this company. A charge of \$3 is made all patients for city calls. This charge

is collected whenever possible by the hospital authorities, and 50 percent of all collections on city calls is allowed us. We also have the privilege of calling this ambulance without charge for free bed cases. Patients living beyond the city limits are charged according to distance, but the hospital is not allowed any commission on these cases.

In this way we have a most satisfactory, profitable, and convenient arrangement; one that causes us no trouble whatever, and makes no demand on the hospital employees, as two men are always sent out by the company on every ambulance call. Another satisfactory feature of this service is that the ambulance is stationed in the center of the city instead of on the outskirts, as is the hospital, so that in hurry calls or emergencies a great deal of

valuable time is saved.

All cases brought to the hospital in the ambulance or any stretcher cases brought in private conveyances are taken to a special ambulance entrance opening directly into our regular admitting room (Fig. 3).

This room is most conveniently fitted up as an emergency operating room, and, if necessary, the patient can be given immediate attention there. This is an especially valuable arrangement in poison cases or patients demanding instant attention for any reason. The admitting room is of fair size, with tile floor, operating table, small sterilizing outfit, instrument and medicine case, and closet for supplies. It has a folding door which opens into the elevator, thus enabling us to remove the patient to whichever department he is assigned without any unnecessary delay or confusion. A wheel stretcher, which is always kept

in the admitting room, and a wheel chair in the main hall are also found of the utmost value in aiding us to be ever ready for emergencies.

Excluding accident cases, over 75 percent of all patients admitted are sent in by the physician in charge of the case, who generally arranges with us in advance for the patient's admission, states the probable diagnosis, and, when possible informs us whether the incoming patient is to go into a private room or the ward.

As this patient has already had a proper examination by the physician admitting him, no medical or physical examination is necessary before as-

Cases of contagion applying for admission are not brought into the general hospital building at all, but are taken through a special outside entrance directly into our isolation pavilion. This department for contagious diseases has two wards for patients, each with nurses, rooms, service, and toilet rooms, all completely separated from the rest of the building.

We have an unusually large obstetrical service in our hospital and have a pavilion accommodating fourteen patients, with a well-equipped case room and large, sunny nursery in connection.

Patients wishing to be admitted to the hospital

	CKLEY HOSPITAL APPLI	CITION I OIL	
No		Date	
	ONLY CURABLE, NONCONTAC	GIOUS CASES REC	EIVED.
(Fill out this blank and	d take or send it to the Superinte	ndent of the Hospi	ital, who will notify you when th
patient may be admitted.)			

			State
			Color
Nature of disease	***************************************		
*	***************************************	***************************************	***************************************
(The following certified	ite must be signed by some respo	nsible person famil	iar with the case and by the atten
(The following certified ing physician.) I hereby certify that I know to be a worthy person and to	nte must be signed by some respo	nsible person famil	iar with the case and by the attended
(The following certified ing physician.) I hereby certify that I know to be a worthy person and t	v M	ensible person famil	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and t	w Munable to pay for hospital treatments as a deserving patient. Signature of	nsible person famil	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and t	w Munable to pay for hospital treatments as a deserving patient. Signature of	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and t	w Munable to pay for hospital treatments as a deserving patient. Signature of	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and t	w M	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and to	w M	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and to	w M	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and to be a worthy person and the control of the	v M	ent of which	iar with the case and by the atten-
(The following certified ing physician.) I hereby certify that I know to be a worthy person and to the control of the control	v M	ent of whichbe notifiedbtified to enter	iar with the case and by the atten-

Fig. 3. Application blank for free bed-Size, 815x11 inches,

signment to ward, except in those comparatively few cases who apply for admittance personally and who are not under the care of any regular physician. For the safety and protection of other inmates, these cases are examined in the admitting room by our house surgeon, a tentative diagnosis made, and the case referred to the proper department. The head of this department is notified of the admission, and assigns such patients to the members of his staff in regular order. These cases, however, are not frequent, as most of our patients are sent directly to us by their attending physicians.

for confinement generally make their reservation in advance, either personally or through their physician. There is such a demand for rooms and beds in this department that the reservation of any particular room must always be provisional, and patients always engage their room with this understanding.

A large number of obstetrical cases, however, especially ward patients, are brought in at any hour of the day or night by staff members, and these cases, usually being emergencies, are taken immediately to that department.

Regular patients who come in private convey-

ance or walk into the hospital are shown into our waiting room, and arrangements made for their care, room, etc. Every patient admitted is received either by the superintendent or one of her immediate assistants. All financial arrangements are made at this time, either with the patient or his friends, and any extra charges, such as those of the operating room, x-ray, or special nurses, are stated and arranged for.

A receipt is given for any valuables or money on deposit for safekeeping or on account. The patient is then taken to his room or ward, introduced to the nurse in charge, and immediately made to feel as comfortable as possible.

In admitting patients we use an admission blank, which we find most convenient for general office purposes (Fig. 4). These blanks are made

in the event of a sudden change in the patient's condition.

After the patient is admitted and temperature, pulse, respiration, and general condition noted, the house surgeon at once notifies the physician on the case of the facts and obtains the immediate orders for the patient's care or treatment, which he records in the physician's order book on wards. There is a standing order for urinalysis and a blood count for each patient admitted. Blood pressure is taken only if desired by the attending physician.

As soon as possible after admission the patient's history is taken by the house surgeon, unless otherwise ordered by the physician in charge of the case. A special chart is also begun immediately by the nurse in charge, which is continued

HACKLEY H	IOSPITAL
NoDate	191 Hour
Name of patient	
Address	••••••
Occupation	Married Single
AgeBirthplace	Religion
Name of nearest relative	
Address	
Attending physician	•••••
Room or ward	Rate
Account to be charged to	***************************************
Valuables for deposit	
Ambulance	
Money for deposit	
Paid on admission	***************************************
Diagnosis	
Date of discharge	***************************************
Demonto	

Fig. 4. Information blank-Size, 71/4 x91/2 inches.

up into paper-bound books of 150 pages each, with perforated edge. So long as the patient remains in the hospital, his admission slip remains in this book in the general office. When he is discharged, the slip is dated, detached, and filed away with his chart and history. We use the card index system—one card for general information and one ledger card. As will be seen, these blanks give our bookkeeper the necessary basis for her regular cards, and do away with the necessity of anyone but herself handling the cards, as all general information required in the office concerning the patient is to be found in this admission book. This book is also of the greatest convenience to the night superintendent in calling patients' friends when necessary, or in determining whether a priest or minister is to be sent for

until the discharge of patient. In case of temperature on admission a special temperature chart is begun, which is continued until discontinued by the physician in charge of the case.

Private room patients are, of course, expected to keep all clothing and personal belongings in their room, but the clothing of all ward patients is carefully listed by one of the nurses and sent immediately to the locker room, where each patient is allowed one locker space. Coats, skirts, etc., are put on hangers. Other garments are folded carefully and placed on a low shelf in the locker.

Should any of the clothing be unclean it is at once listed, tagged, and sent to the laundry before being placed in the lockers. In the case of vermin being present, the entire clothing is imme-

diately sterilized, after which it is cleaned and cared for in the usual way.

In large institutions it is possible to have a special department for the reception and bathing of ward patients, storing of clothing, etc., but in smaller hospitals considerable of this work must necessarily be done in the general bath rooms.

We have a standing order to give a bed bath to all newly admitted ward patients, unless their physician states that a tub bath may be given. All new patients are put on a straight milk diet until otherwise ordered.

One matter which we find most difficult to control in our hospital is that of visitors. It must

cal condition, especially one from out of the city, or of a small child whom it seems unwise to separate from its mother, the courtesy must be extended. In such cases visitors are served with trays, the diet being the same as that served in the wards or pavilions, and a charge made of 35 cents for breakfast and 50 cents for dinner or supper. For a mother or relative who stays in the hospital a charge of \$5 per week is made for board. Of course privileges of this character have to be controlled very largely by the exigencies of the case.

There is a great demand among operative cases for special nurses, and, where expense has to be

				COND	TION
	Name	Physician	Room or Ward	Sunday	Monday
***********	***************************************	***** *********************************	** ************************************		

Fig. 5. Daily report blank-Has space in width for all the days of the week and has space in length for thirty-five names.

	Muskegon, Mich.,19
This Certifies that	
the Hackley Hospital of my own free will and request, and ag	ainst the advice of the superintendent and the att
ing In doing this I take all	risks, and free, now and hereafter, said Hospital
authorities, and the attendingfr	rom all responsibility and blame.
***************************************	***************************************
5	Signed
Witness	
Witness	

Fig. 6. Release blank-Size, 81/x11 inches.

be remembered that most of our ward patients come from comfortable homes and many from the outlying farming districts. The families of such patients are naturally anxious to see their sick friends and relatives whenever their business necessitates a trip to the city and it is necessary many times a week to make exception to our general rules for visiting hours—from 2 to 4 p. m. daily, and every evening, except Sunday, from 7 to 8:30 p. m.

Another problem is the handling of patients' friends and relatives who, for special reasons, desire to remain in the hospital with them. Under ordinary conditions it is, of course, impossible to permit this, but in the case of a patient in a criti-

carefully considered, we frequently assign one of our senior pupil nurses to the case, thus lightening the burden of expense for the patient and also giving the nurse in training a valuable opportunity to gain experience in this particular line of work. For those patients who can afford it, graduate nurses are called.

In our general office we keep a list of patients on large ruled sheets, which are made out weekly, the names of the new patients being added from day to day (Fig. 5). A space is left on one side for the daily report of the patient's condition, which is filled in each morning by the night superintendent, so that early morning telephone inquiries as to patient's condition can be answered

quickly and correctly. As patients are admitted or discharged, names are added to or taken from this list, which is kept on the telephone desk for ready reference.

The night superintendent makes up the daily census report at midnight from each ward, and the total for the hospital in a special book for that purpose, noting admissions, discharges, births, and deaths for the past twenty-four hours.

Patients are discharged only by the physician

sician and hospital authorities from all future responsibility or blame (Fig. 6).

If any patient unexpectedly takes a serious change for the worse, the attending physician and the patient's family are immediately notified by the hospital authorities. In case of death the body is cared for in the usual manner and removed to a mortuary in the basement, from where it can be quietly and easily removed by the undertaker without possibility of being seen by any

	Muskegon, Michigan
On or before	after date, for value receivedjointly
and severally promise to pay to the order of	HACKLEY HOSPITAL

	lichigan, with interest at six percent per annum after thirty days from severally waive presentment for payment, protest, and notice of non-be made as follows:
date. The makers and indorsers of this note	severally waive presentment for payment, protest, and notice of non-

Fig. 7. Promissory note-Size, 71/2x31/4 inches.

in attendance on the case, or by his order through the house surgeon, such orders being in writing. The office is notified of all such discharges, and the patient's account is made out at once and sent to the ward, so that it may be settled, if possible, before the patient leaves, and also in order that, if there is any item on the statement which is not clearly understood, it can be explained to the satisfaction of the patient. Any money or valuables

HACKLEY HOSPITAL.

E. A. GREENER, Superintendent.

Fig. 8. Notification of maturing note—Size, 6x31/2 inches.

which have been deposited for safe-keeping are given to him at this time.

When ready to leave, the nurse in charge brings the patient to the office, with his chart and history, and does not leave him until he is safely turned over to his friends or placed in a conveyance to be taken home.

Should a patient decide for any reason to leave the hospital when in the judgment of his physician it is unsafe or unwise for him to do so, he is requested to sign a release, which exempts the phyhouse patients, thus sparing them this most depressing sight.

Patients who are unable to settle hospital accounts before leaving are required to sign a note which gives them the required amount of time needed for settlement (Fig. 7). A few days before such note falls due, if we have not already heard from the case, a little reminder is sent him in printed form (Fig. 8).

As is the case in so many communities, our hospital came just when its need was being felt in this city and vicinity, and it has grown steadily in the service of the community and in the appreciation of the people. Experience has disarmed criticism, and gratitude has taken the place of prejudice and fear.

The Injured Finger.

One of the most human, artistic, and appealing pictures we have seen is "The Injured Finger," published by the Surgery Publishing Company, of New York. This depicts a representative type of the present-day physician treating an injured finger of a street urchin, while his two pals are intently and sympathetically watching the operation. We are sure that the physician would prize and his patients and friends would enjoy this beautiful reproduction, which is so much more natural, more appealing, and more human and so different from most of the familiar office and library pictures depicting gruesome scenes.

Dr. Harvey Cushing, professor of surgery in Harvard Medical School, deplored the fact recently that human surgery and animal surgery had ever been separated, because he thought there was little difference between the two.

JAMES BUCHANAN BRADY UROLOGICAL INSTITUTE OF JOHNS HOPKINS.

Second Structure of Its Kind in the World Provides Facilities for Best Scientific Study of Rapidly Developing Field of Medicine.

BY HUGH H. YOUNG, M. D.

ASSOCIATE PROFESSOR OF GENITO-URINARY SURGERY, JOHNS HOPKINS UNIVERSITY, BALTIMORE.

IN the summer of 1912 the writer showed to Mr. James Buchanan Brady tentative plans for a building to be devoted to urological surgery, and Mr. Brady decided to build and maintain such a building at the Johns Hopkins Hospital.

The tentative design consisted of a six-story building to connect with and utilize the present excellent out-patient genito-urinary dispensary, with public and private wards, adequate laboratories and rooms for research and experiment, and quarters for residents.

Authorized by Mr. Brady to design a building costing about \$200,000, we first made a cursory study of hospitals here and abroad, but could find only one—St. Peters, London—solely devoted to urology. We then proceeded to perfect the plans

and specifications for a building in which the laboratory and experiemental side should play a very important role, and in which clinical material, public and private, out-patient and in-patient, could be used for study, research, and advancement in the field of urology and border line subjects. The accompanying photographs of plans show the fruition of our labors of over a year. The foundations are now just being laid, with expectation of completion of the building within a year and dedication in October, 1914.

The building consists of six stories, a basement, and an attic story. The location was determined by a desire to be adjacent to and to connect with the genito-urinary out-patient dispensary in the first floor of the surgical building. For this pur-

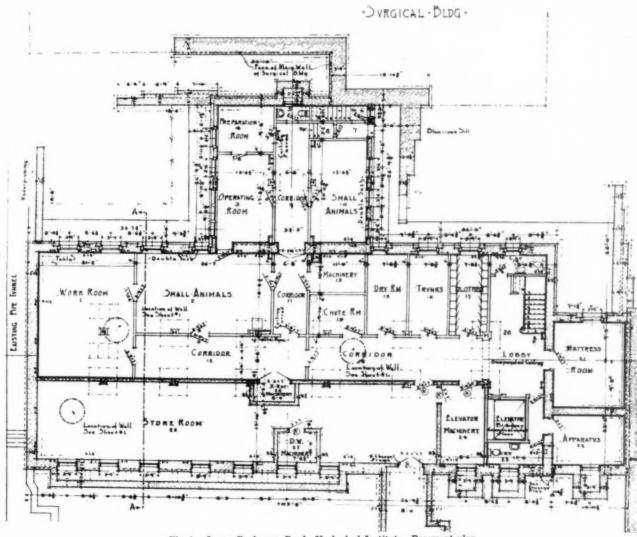


Fig. 1. James Buchanan Brady Urological Institute-Basement plan.

pose there was a space of about 120 feet between the surgical building and the kitchen on Monument street, for which a building 45 feet wide has been designed.

It was considered very important that the entrance should connect directly with the main corridor which connects the various wards of the hospital, and this has been very successfully provided for by converting a portion of the north end of the ground floor of ward D into a corridor and broad entrance hall, from which the stairs and elevator are reached, as shown in the second floor plan. As the main corridor is on high ground, it

and the main corridor will make for simplicity and ease of management.

Taking up the several stories seriatim, we see that the basement will contain rooms for animal experimentation. In order that no smell or noise shall get beyond the rooms in which the animals are kept, fresh air is to be forced in at the ceiling, after passing over steam coils, and then drawn out by other fans through registers near the floor. In this way a healthy atmosphere can be maintained without opening the windows. Adequate operating and preparation rooms are provided, with apparatus for sterilization, etc.

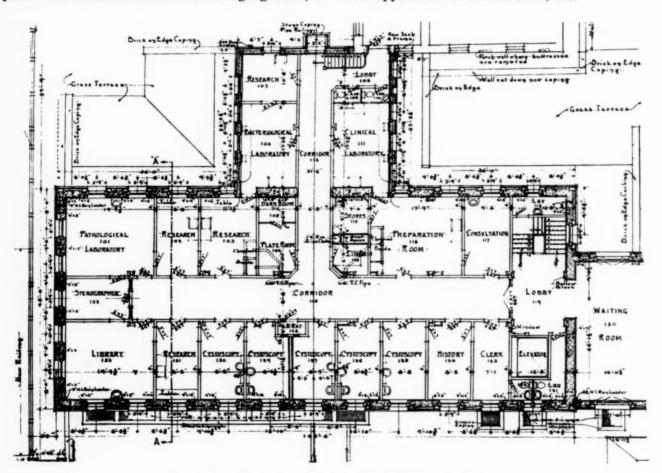


Fig. 2. James Buchanan Brady Urological Institute-First story plan.

has been possible to get two stories beneath this level—the first floor, which connects with the genito-urinary out-patient dispensary on a level with the street, and the basement, which will be well provided with light by using sloping terraces rather than retaining walls around it.

On the west side the building is connected with the kitchen by a bridge through which food will be brought directly to the dumbwaiter supplying the five floors above. This will make it unnecessary to enter the building with food wagons, the food elevator being loaded from without—a great desideratum. The proximity to the surgical building, the out-patient dispensary, the kitchen, A work room, to be fitted up as a well-equipped machine shop, is intended to be used in the preparation of experimental apparatus and new surgical instruments. The rooms above described are provided with abundant illumination by cutting away the surrounding embankments to the form of gradual terraces, which will obstruct no light.

The remainder of the basement, the west side and south end, will serve valuable utilitarian purposes, providing a room for soiled clothes, which will reach it by chute from the upper floors of the building; a dry room provided with steam for drying bed clothes, mattresses, etc., a room for the storage of trunks, a clothes room, with individual lockers for patients' clothes, rooms for storage of mattresses and apparatus, and a long store room, which connects with the store rooms of the kitchen building by means of a tunnel and lift, as shown in the basement plan.

The first floor is to take care of varied activities. Patients to be admitted to the hospital are shown to the waiting room. Rooms for clinical purposes, history taking, consultation, and examination are amply provided for. Many of the rooms labeled cystoscopy will be really for general urological examinations, including urethroscopy, cystoscopy, and ureter catheterization. Each room will have hot and cold sterile water, pro-

tory will be used for urinalysis, blood work, etc. Laboratories for bacteriology, pathology, and chemistry, and three or four rooms for private research, are provided. These, taken in conjunction with the rooms for animal experimentation in the basement, should offer good opportunities for investigation. The various laboratory rooms are to be equipped with vacuum and compressed air, and the four chemical hoods will also have steam connections. Running water and small staining sinks on the microscopic tables will add to the convenience of the workers.

This laboratory floor ties in with the genitourinary out-patient dispensary, which, as will be seen by the plans shown, is very commodious and

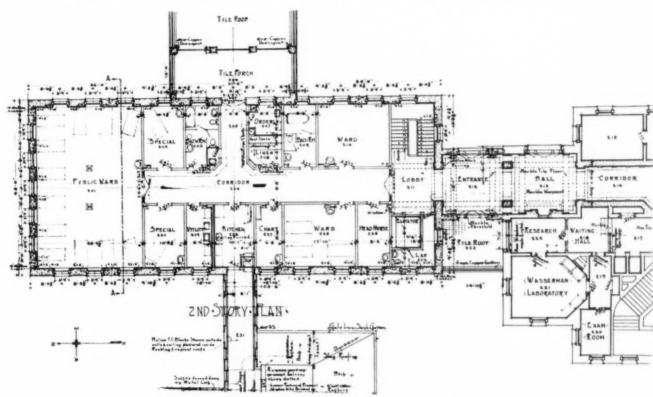


Fig. 3. James Buchanan Brady Urological Institute-Second story plan.

vided from a general system, for the preparation of irrigations, an electric sterilizer for instruments and nozzles, sink, lavatories, etc. Two of these rooms are adjacent to x-ray apparatus, so that pyelographs, radiographs, high-frequency treatments, etc., can be done without moving the patient from the cystoscopic table. Specimens removed from patients for urinalysis or histologic diagnosis may be studied in the adjacent laboratories, and x-ray plates may be developed and studied in rooms provided for this purpose.

The laboratories on this floor are intended to be very complete and adequate for a small group of workers. The preparation room, with hoods, cupboards, and store room, will be the work place of one or more technicians. The clinical labora-

well adapted for a large out-patient clinic. The general clinic room holds six operating tables, besides two places for standing irrigations, sterilizing apparatus, etc. Adjacent is a clinical laboratory in which urinalysis, bacteriological work, and study for spirocheta are made. Another room provides two tables for minor operations, and next come rooms for urethroscopy (one table) and cystoscopy (two tables). A lecture room and a small teaching museum complete the floor, which connects with the two-story L of the Brady institute.

Important and interesting cases discovered in the out-patient department will be brought across and thoroughly worked up in the examining rooms and laboratories of the institute, and, if necessary,

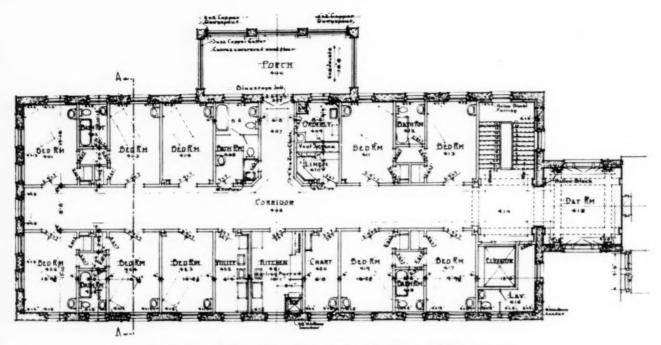


Fig. 4. James Buchanan Brady Urological Institute-Fourth and fifth story plan.

ureter catheterization, functional renal tests radiographs, pyelographs, etc., carried out before or after admission to the hospital wards.

It is the intention to use the hospital residents and interns and a selected group of outside workers in all the various departments at different times of the day—dispensary, laboratories, research rooms, animal experimentation, hospital examinations and treatments on public and private patients, work in the operating room in the surgical building on operating days, and in the wards. This concentration of various activities should do much to save time, facilitate thorough work, bring all the workers into close touch with each other, inspire a spirit for experiment and

research, and insure a full utilization of all the clinical material at hand. We hope to secure two or more well-trained whole-time laboratory men to lead in research and experimental work.

The second story contains a public ward for twenty patients, subdivided into a large ward for twelve patients, two single-bed wards for special cases, and two small wards of three beds each, Each ward is provided with a lavatory, and there are two bath rooms and toilets for general use. In this way cases can be isolated for special study.

The service rooms are grouped at the center of the building, which should facilitate administration. The food lift is reached from the outside of the building on this floor by a flying bridge

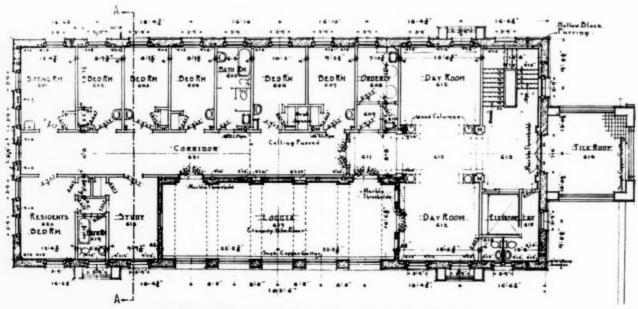


Fig. 5. James Buchanan Brady Urological Institute-Sixth story plan.

from the kitchen, thus doing away with the necessity of bringing the food wagons into the building.

The main entrance is also on this floor, the connection being made with the main hospital corridor by means of a short corridor shown on the plan and a dignified "foyer" or entrance hall. This room, 15 by 34 feet in size, will be decorated in gray marble, with mantle, over which a bronze dedication to Mr. Brady will be placed. Lighted by French windows on each side and with a few attractive chairs and settees here and there, it should prove a pretty feature. Through this hall the second public ward is reached by a single stair

of salvarsan will be secured, thus making a very complete subdepartment for syphilis.

The third story is similar to the second—a public ward for twenty patients. Over the entrance hall of the floor below an attractive day room is secured.

The fourth and fifth stories contain ten rooms each for private patients. One public and four private baths are provided. The latter may be used with either or both of the adjoining rooms, which may likewise be used en suite. Every room is provided with lavatory and running hot and cold water, which should prove a great con-

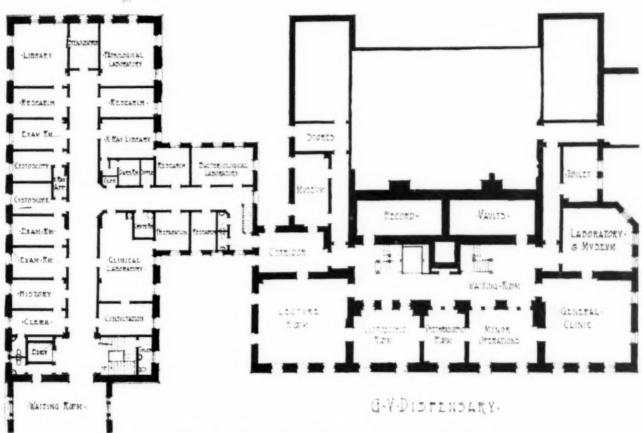


Fig. 6. James Buchanan Brady Urological Institute-First story of new building.

flight, and the elevator serves the private wards and roof garden.

An office for the chief nurse of the building is next to the entrance lobby—a convenient point for administrative purposes. To the left of the corridor, as one enters, is the entrance to the serological or Wasserman laboratories. Here this work for most of the hospital will be done—hence the desirability for having it convenient to the main corridor. A waiting hall, for patients, an examining room for obtaining blood and other specimens, a laboratory, and a research room are provided. The animals for this work will be kept elsewhere in the basement, as described. It is probable that rooms nearly for the administration

venience to the patients, nurses, and doctors, and greatly minimize the danger of transmitting infections to other rooms. The same grouping of service rooms seen on the public ward plans are shown here, and day room and porch are also provided.

The corridor floors are to be of battleship linoleum, with a broad border of gray marble, and a similar coved marble base, both on the private and public ward floors, and is copied from the Marburg building, in which it was first placed with very pleasing effect. In the laboratories terrazzo is to be used, and also in the examining rooms, except the two in which x-ray work is to be done, and in these sheet rubber will be employed to minimize danger of shock, etc. The private bed rooms will have wood floors of Georgia pine.

The sixth floor is primarily for residents' quarters. The chief resident will have his study, bed room, and private bath; the others each a bed room, with lavatory and running water, and the use of a common sitting room. The rest of this floor is to be used as a day-time sitting and loung-

ing place for private patients, a large day room, an open porch or "loggia," and a deck or roof garden.

The attic floor is not to be finished. With numerous dormer windows, it is well lighted, and may be used as an extension of the laboratories or for other purposes. No operating rooms for patients are provided, as ample accommodations are present in the surgical building.

SOCIAL SERVICE—A CONTRIBUTION TO ECONOMY AND EFFICIENCY.

End Results Are Best Secured by Follow-Up Work in the Homes of Patients—Conditions Under Which Social Service Is Most Efficacious.

BY ELIZABETH V. H. RICHARDS,
HEAD WORKER SOCIAL SERVICE DEPARTMENT BOSTON DISPENSARY.

K NOWING that the American Hospital Association is organized for the "promotion of economy and efficiency in hospital management," I shall confine my paper on social service to its relations to those two administrative features. Of social service in relation to progressive medicine and to the humanitarian side of medical care I shall not be able to speak, although to both it has a contribution to make.

It was in the out-patient department that social service had its beginning. That its need was first felt there may have been due to a sense of ineffectiveness of which a physician is far more conscious in an out-patient department than in the wards of a hospital. In the latter he is given every facility for painstaking and thorough care of his patients; the opportunity for their control includes the entire regulation of their daily routine; every convenience for expert diagnosis and treatment is available. Above all, as the patient remains in the hospital in most instances as long as the physician feels it necessary, he may look forward to a reasonable period of time in which to test his diagnosis and observe his patient's response to treatment. How different from the situation in an out-patient department! There patients file by in rapid succession; there is often little time for thorough examination, and the equipment of an out-patient department has, in many instances, suffered in comparison with that of the wards. The assistance necessary for careful recording is often lacking, and, above all, many patients do not come back. Treatment is prescribed halfheartedly, with the knowledge that much of it will not be, cannot be, carried out. Dr. Cabot describes this situation so vividly in his first annual report when he says: "There occurs

many times each year a scene not unlike that described in 'Alice in Wonderland':

"'Have some wine,' said the March Hare.
'I do not see any,' said Alice.
'There isn't any,' said the March Hare."

Without any sense of the humor and pathos of the situation, we say (in substance to many patients): "Take a vacation, get a job, get a set of teeth, or get a truss." There is none in sight and no means of getting any. All these factors combine to minimize the interest in, and therefore the importance of, medical service in an outpatient department.

Social service is not a panacea for these problems, but social service can offer definite lines of assistance to the physician and to the administration which may lessen certain discouraging aspects of an out-patient service. The most obvious one, and therefore the one on which most emphasis has been placed, is that in connection with making treatment effective.

The passing of the family physician, intimate with the whole background of his patients' lives, leaves the doctor in an out-patient department to suffer under disadvantages unknown to the old family practitioner. Lack of knowledge of a patient's inheritance, home conditions, domestic problems, and financial status are all handicaps to diagnosis and treatment, and ones which the social service can materially lessen by home visiting and by added interviews in the dispensary.

The passing of pills and powders, and the substitution in many instances of fresh air, rest, wholesome food, and recreation, has left a gap not met by the apothecary. In the first year of one social service department 1,000 patients were referred for more than fifty different reasons. These reasons have been classified into what

¹Paper read before the American Hospital Association, Section on Social Service, Boston, August 28, 1913.

might be called social prescriptions found necessary by the doctor as a part of treatment; they include instruction in hygiene, temporary home during treatment, rest, change of work, glasses, orthopedic plates, false teeth, special diets, general health built up previous to operation, wholesome recreation, provision for unmarried mother, bad habit to be broken, and home and industrial adjustment for the cardiac and tuberculosis cases, and these are only a few of a long list.

In order the more effectually to give this personal service to the individual patient, social workers have been finding it necessary to develop their organization and methods of work in a somewhat different form than was anticipated. The first social workers were placed in an office, which constituted, in medical parlance, a social clinic. To this clinic or department were sent those patients for whom the physician asked special help. Thus the choice of patients for social service was entirely dependent on the interest, leisure, and ability of the doctors to select them. In many social service departments it was not at all uncommon, nor is it today, to have referred from the same clinic, with each change of service, quite different types of problems. From a given clinic during one doctor's service only patients needing convalescence would be referred. During the next doctor's service, unmarried, pregnant girls would be sent. During the third doctor's service the majority of patients referred would be those requiring an operation, and to plan for the family during the absence of the breadwinner or homemaker would be the demand. This irregularity of opportunity made social service seem a matter of accident, and those doing the work could feel no assurance that the patients sent them were the ones which they were most likely to be able to help, for in social work no less than in medicine there are ills for which cure or relief is still unfound, as the chronic loafer, and others, again, for which there is almost as sure a specific as quinine for malaria. These unsatisfactory features of social service, combined with others also realized in the day's routine, brought up two questions for which there seemed no available answer:

- 1. What are the problems of an out-patient department?
- 2. In which of them, and in what ways, may social workers be of use?

Such questions are in reality for the administration of an out-patient department to answer. To answer them, two steps are necessary—first, a chance to study the facts, and, second, a chance to experiement under favorable conditions. In both steps social workers have been enelisted, and,

as will appear from some of the studies and experiments which follow, they have been given an opportunity to be of assistance to the executive authority, as well as to the physicians, in achieving better results in the treatment of patients.

In studying a general medical clinic it was found that of the total number of patients coming for treatment 63 percent of them made but one visit. The same percent has been found true, with slight variation, in a genito-urinary department and a mental clinic. In the mental clinic just noted the experiment was tried of placing a social worker in the clinic, and as a result of personal visits and letters, in three months, the average per patient, was raised from one to five visits. In a children's clinic, by a postal-card system of communicating with patients who did not return, the number of visits per patient was raised from 2 plus to 4 plus, while in a skin clinic in which a social worker sees every patient as many as fifty-seven patients have returned for treatment in answer to fifty-eight letters.

In a three-months' study of a mental clinic the number of cases with deferred diagnosis reached 46 per cent of the total number, while during a similar statistical period in which there was a social worker in the clinic this number fell to 6 percent. At first sight any connection between social service and diagnosis may seem far-fetched, but the explanation is a simple one. The social workers' relation to diagnosis was largely one of following up the patients and getting them back sufficiently often to make it possible for the physician to make a diagnosis.

During a three months' service in a medical clinic in which thirty patients were advised by the physicians to have operations, only five are known to have done so, while in a gynecological clinic every one of the twenty patients referred to social service had the operative treatment advised and came back to the doctor, so that he could see the results. The part which the social worker played with these patients was one of added persuasion to that of the doctors; seeing relatives and friends in regard to it; arranging for the family's care during the patient's residence in the hospital; seeing that those patients requiring convalescent care secured it, and that work was adjusted to the post-operative condition either temporarily or permanently.

In a study of twenty-one children with vaginitis it was found that they belonged to families consisting of sixty-three members. Through the efforts of social workers forty-six of these were examined, the doctors finding in these forty-six, eleven other cases of infection. All thirty-two cases remained under treatment until discharged,

and those of school age were excluded from school, with the knowledge of the school and health authorities. When one reads in the recent studies on vaginitis the recognition that much of the so-called stubborness to treatment and many recurrent cases are probably due to reinfection from some uncontrolled source, and not, as previously accepted, to the idiosyncrasy of the disease, these figures take on a new significance, and they also bring up the question, Can the average clinical physician treating vaginitis have, without some follow-up system, the knowledge and control of his patients necessary to the cure and prevention of this disease?

Just what proportion of all treatment prescribed is secured, the usual records of an out-patient department do not tell. However, in relation to equipment ordered—as, for example, orthopedic apparatus or glasses, for which the out-patient department retains the measurements-very definite figures are obtainable. Previous to the follow-up work of a social worker in an eye clinic, as high as 60 percent and never lower than 30 percent of the patients for whom glasses were ordered failed to return for them. With the help of a social worker this number has fallen to 4 per cent. Thus the addition of a social worker to a clinic is an economy when one considers the time it takes for experts to test eyes, and the results to the eyes and to the working efficiency of patients needing glasses.

To sum up, the findings of these studies and experiments seem to show three things to be true: first, that social service is one means of preventing certain uneconomic features of out-patient treatment-to-wit, those involving the irregularity of attendance, the uncontrolled channels for the spread of infection, and the failure to carry out treatment prescribed; second, if the social problems of an out-patient department are to be known with anything like completeness, and met with the least waste of effort, social workers should be placed in the clinic where they are easily accessible to both physician and patient; third, such study is a means of knowing in just what degree the efficiency of an out-patient department is increased by the addition of social service. Only by such cold analysis in terms of large numbers can fallacious arguments be prevented. Social workers have much to learn from the scientific spirit of medicine. A physician does not argue a form of treatment to be good or bad from its reaction in one case, but from its proportionate results in a hundred or more cases. So social workers are striving to make for themselves a place in out-patient service not by recounting successful individual cases, but by demonstrating,

in relation to the whole work of an out-patient department, that they can and do contribute to its economy and efficiency.

In closing I wish to emphasize the fact that in America social service in an organized form is but eight years old. A beginning only has been made, and each year does and should see changes in its program. Also, as the needs of one hospital are quite different from those of another, so should the character of social service vary in each institution, and, again, in each city, according to its local charitable and health problems. Social service is a measure whose value depends on two factors—the training and experience of those doing work and the use made of it by administrators and physicians.

INTERNATIONAL HOSPITAL FOR TOKIO.

Funds Aggregate \$500,000, Raised in America and Japan
—Will Have 200 Beds.

There is a most promising outlook for an international hospital at Tokio, Japan. Dr. R. B. Teusler, head of the present 80-bed St. Luke's Hospital, who has been in this country for the past six months raising money for the very great extensions contemplated, has returned to Japan with \$210,000 of the necessary \$500,000 assured.

An exceptionally strong committee has been organized in New York, composed of the following well known people: Lloyd C. Griscom, former ambassador to Japan, president; William Jay Schieffelin, vice-president, and John S. Rogers, secretary; executive committee and members of the board, Griscom, Rogers, Schieffelin, James A. Scrymser, Lindsay Russell, Dr. Lyman Abbott, ex-Ambassador Larz Anderson, Martin Egan, Charles W. Eliot, A. S. Frissell, John Esher Knobel, Seth Low, Hamilton Wright Mabie, W. Fellowes Morgan, ex-Ambassador Thomas J. O'Brien, E. E. Olcott, George Foster Peabody, George Wharton Pepper, John S. Rogers, Charles H. Sherrill, Melville E. Stone, Willard D. Straight, Samuel Thorne, Jr., George Zabriskie, and J. G. Zachry.

The proposal to establish a department for original research into oriental diseases is said to have interested Mr. Rockefeller, and he may extend substantial aid in this direction. Among the large contributors to the fund in Japan are Baron Goto, a member of the cabinet, who will give \$25,000, and several associates who have promised to raise \$75,000 more.

The new hospital is to include 150 beds, a training school for nurses, a post-graduate course for physicians, and a special laboratory for the investigation of oriental diseases.

St. Luke's was founded as a missionary hospital in 1901, and at present has 80 beds, ten Japanese physicians, three foreign physicians, a nurses' training school of thirty nurses and six district nurses, and is the only institution doing district nursing work in Japan.

The medical professors of the Imperial University in their several branches are consultants to the hospital, and foreigners visiting and residing in Tokio have the privilege of attendance for treatment.

A national council of women to augment the work of the men has also been organized, of which Mrs. George Wharton Pepper is chairman and Mrs. Charles Randall Pancoast secretary and treasurer.

ORGANIZATION OF THE DISPENSARY OF THE JOHNS HOPKINS HOSPITAL.1

Out-Patient Service Follows Patients Into Their Homes—Visiting Nurses Important Factor—Stenographic Histories Give Value to Work—Business Details Enter in Technic.

BY RALPH B. SEEM, M. D.

ASSISTANT SUPERINTENDENT JOHNS HOPKINS HOSPITAL.

PAPER II

THE dispensary, or out-patient department, is a very vital part of the hospital, for it is here that patients come seeking advice, either in the early stages of acute disease which requires hospital treatment, or here they are treated for a longer or shorter period of time for minor ailments or for chronic, but not bed-confining, diseases. Furthermore, here it is that students of the Johns Hopkins Medical School first come in contact with patients. It has its own one-story building, connected by a closed corridor with the general hospital.

The director, in accordance with the rules of the hospital, must be a physician. He is one of the assistant superintendents, and is selected by the superintendent with the approval of the Board of Trustees. The director has general supervision and direction of all departments of the dispensary. They are seven in number, as follows: The department of medicine, with four subdivisions—general medicine, clinical neurology, Phipps' tuberculosis, gastro-enterology; the department of surgery, with seven subdivisionsgeneral surgery, ophthalmology, genito-urinary diseases, laryngology and otology, dermatology, orthopedic surgery, x-ray; and the departments of pediatrics, psychology, gynecology, obstetrics, and social service.

Each department is under the supervision of the chief of the corresponding hospital service. He is represented in the dispensary by division chiefs, who are assisted by physicians in charge and as many assistants as are necessary. All are members of the teaching staff of the Johns Hopkins Medical School. The chief of each division nominates his various assistants, who must also receive the approval of the medical board and the trustees of the hospital. These assistants can work in the dispensary only after being appointed by the hospital trustees, but they are appointed as teachers (instructors, assistants, etc.) by the Johns Hopkins University, since the medical school is an integral part of the university. In brief, this is the organization which handles the patients who come for treatment.

When a patient comes to the dispensary for the first time, he is met by the doorkeeper, who guides

him to the director, who has a desk in the center of the waiting room. The director, after questioning him briefly and determining in his own mind that the applicant is a suitable person for treatment, gives him an unfilled admission card, the color of which, as well as the printed matter, designates the proper department. He now passes to the recording clerk, who collects a 10cent registration fee and typewrites the patient's name, the date, and the admission number on the card, and the same data, with some social data, on the history card. After these preliminary steps the patient is directed to the proper department for treatment, where the physician examines him and fills out the history card. The patient retains only his admission card.

On a return visit the patient presents his admission card, and is directed to a clerk who records this number and sends the latter to the record gallery to secure the history. The clerk collects the fee for the visit (10 cents is charged for each visit), and issues a numbered pass to the patient, who then goes to his department. The passes are numbered serially for each department. This pass is taken up by the examining physician, and serves as a census record of the number of patients seen every day, and also indicates to the physician that the patient has been passed by the clerk at the door.

A patient who has lost his admission card is directed, when he returns, to a special seat, where he is interviewed by one of the record clerks, who looks up the registration, and a new card with the original number is issued, for which a fee of 5 cents is charged.

The histories from all departments at the end of the day are collected from the examining rooms and filed by number in the central record room. A name index card and a diagnosis index card are made out for each patient, thus securing a cross index. When a patient is being treated in several departments, a history sheet for each department is added to the original history and the entire history accompanies the patient to each department. Each department sheet for any one patient has the same number. The histories are carried by a messenger to the different departments.

All departments are open each day of the week,

¹Second of a series of eight papers on the organization and administration of a large general hospital, prepared under the direction of Dr. Winford H. Smith by his associates in Johns Hopkins Hospital.

except holidays and Sundays. Some of the departments are open in the morning and others in the afternoon, as our accommodations are not large enough to have all departments in operation at one time. None of the departments are open at night.

After a patient has been examined and he has received a prescription, he goes with it to the dispensary pharmacy. For each prescription has been filled. In this way the confusion which arises from similar names, and the chance of giving one patient the medicine intended for another, is avoided. This cash register gives an absolute check on the moneys taken in. When the druggist turns in his cash at the close of the day, the prescription stubs are examined to see that the sequence of numbers is complete, thus controlling all prescriptions filled by the druggist. As the

Name	======================================	
Address	***************************************	S. M. W
Race	Birthplace	Occupation
MEDICINE.		
DIAGNOSIS:		

Fig. 1. History card-Size, 61/4x9% inches; has 22 lines for "complains of."

there is a charge of 10 cents, except for a few expensive drugs, which are sold at cost. The druggist takes the prescription from the patient, introduces it into a cash register, especially designed for us, which stamps on the prescription and its duplicate stub a number, the date, and the price, and whether it is free, to be charged, or paid. It also designates the pharmacist handling it. In this same operation the duplicate stub is cut off and is given to the patient, who must present it to the druggist when the prescription

machine adds the price registered for each prescription, the total must tally with the amount of cash in the drawer, plus the total amount for free and charged prescriptions. Whether a patient is to be treated free is determined by the director. There are no fees for special treatment, such as x-ray, for Wassermann, or other blood tests.

In the third term of the second year of their medical school course, students begin their clinical work in the dispensary and continue it throughout the third and into the fourth year.

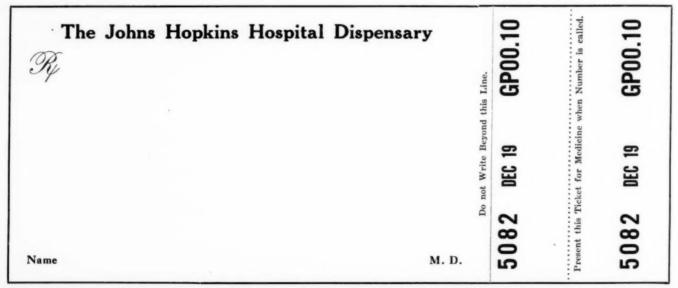


Fig. 2. Prescription blank—Size, 7%x3% inches; the duplicate stub, which is cut off at the dotted line by the register, is retained by the patient.

They take the histories of patients, and examine them under the supervision of the doctor in charge of the department, or one of his assistants. The students serve as surgical dressers and assist in giving the various forms of treatment. They make laboratory tests under the direction of the doctor in charge of the laboratory, who is a member of the medical school staff and gives the course in laboratory diagnosis.

Of the patients who are registered in the obstetrical department, primiparæ and those presenting possibilities of a difficult labor are advised to enter the hospital for their confinement. The others are cared for in their homes. All patients are asked to return to the dispensary for observation at regular intervals, or sooner if untoward symptoms arise. The cases to be attended in their homes are asked to send word to the hospital by a man as soon as labor pains begin. This messenger is given the bags containing the obstetrical outfit to carry to the patient's home. A doctor, a student, and a nurse respond to each call. The student visits the patient daily for ten days after

confinement, and longer if the patient is not doing well. The nurse, however, makes daily visits for only three days following the confinement. (We plan to increase the number of nurse's visits.) After this, if the patient's condition is satisfactory, she is referred to the Babies' Milk Fund Association of Baltimore for further care and direction.

The department of social service has one worker in each of the following departments: orthopedic, pediatric, general medicine, Phipps' tuberculosis, and two in psychiatry. Each worker devotes all of her time to the patients of her particular clinic

As to the general force required to operate the dispensary, aside from 135 physicians and surgeons, there are a director, a physician in charge of the laboratory, five graduate nurses, eleven pupil nurses (a number which varies somewhat), three stenographers, six clerks, one doorkeeper, two messengers, one orderly, and seven cleaners. About 20,000 new patients apply for treatment each year, and they make about 80,000 visits.

IOWA'S FIRST COUNTY HOSPITAL IS A PRONOUNCED SUCCESS.

Generous Support by All the People of Hospital Provided Out of General Taxes Demonstrates Wisdom of Law—First Year's Work Most Promising.

BY MISS AMY BEERS, FAIRFIELD, IOWA, SUPERINTENDENT.

I OWA is distinguished by the fact that it was the first state to offer any solution to the problem of caring for the sick in rural communities. The county hospital law, written by Dr. E. E. Munger, of Spencer, Iowa, and passed by the Thirty-third General Assembly, provides that a public hospital may be built in each county of the state. This hospital system is somewhat similar to that of the public schools, the funds for the hospitals being procured by taxation.

Through the press, by lectures, and by the circulation of printed matter the people of Jefferson county were informed as to the nature of the hospital law and the advantages and need of a home hospital, and on March 27, 1911, a special election was held to submit the question to their vote. By a majority of 493 votes a one-half mill tax for ten years was levied to furnish funds for a county hospital. This taxes the average tax-payer about 3½ cents per month for ten years. Too much credit cannot be given to the physicians, nurses, ministers, and numerous private citizens who devoted unlimited time and energy to exploiting the hospital movement, as many people had old prejudices and misguided ideas to be overcome.

On April 4, 1911, the seven hospital trustees

(laymen), appointed by the Board of Supervisors, met and organized, and on August 10, 1911, began building the Jefferson County Hospital at Fairfield, the geographical center of the county, the county seat and the largest town. The appointed trustees served until the general election, when the offices were filled in the same manner as all other county offices. The trustees have absolute authority, hold monthly meetings, and decide all questions relative to the hospital government.

Under the original law the Board of Supervisors was permitted to appropriate 5 percent of the general fund of the county for maintenance of the hospital, but an amendment passed in 1913 provides that an annual tax, not to exceed 1 mill, may be levied, the amount of the tax being determined by the Board of Supervisors in accordance with the requisition presented by the hospital trustees after their August meeting.

The tax levy yielded \$27,000, but this amount proved inadequate for the type of building desired, and an additional \$4,200 was subscribed by public-spirited citizens of Fairfield. Suitable furnishings and splendid equipment were made possible by the generosity of individuals and societies.

Dedication exercises were held on September

17, 1912, and the hospital was open for inspection. Dr. Munger delivered a convincing address on "Hospitals in Rural Communities," and impressed the audience with the breadth of the health problem, showing how the county hospitals should prove economic and educational institutions.

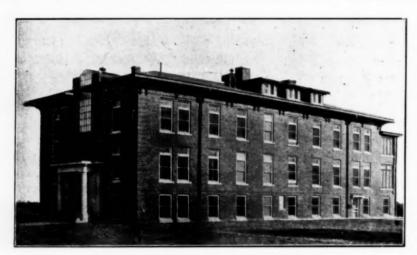


Fig. 1. Jefferson County Hospital-Front and side view.

Thousands of Jefferson County residents attended the exercises and visited the building, bringing generous donations of home-canned fruits and other delicacies, expressing a personal interest in the welfare of the hospital, surprise at the modern equipment, and a desire to render assistance. able demonstration of the results of scientific care. During the first year 252 patients were admitted, a daily average of 9.26 was maintained, making 3,522 days of service; 19 babies were born, and 133 patients had surgical operations performed. At one time in September 25 patients

were receiving care, this being the capacity of the hospital. The year's earnings amounted to \$8,500 while the expenses ran slightly over \$10,000. During three months of the year the earnings exceeded the expenses, proving that the hospital will be almost self-maintaining when well established with a census of 15 to 25 patients.

A training school for nurses, organized November 1, 1912, and operated in connection with the hospital, offers a three-year course recognized by the Iowa State Board. A nine-room cottage, admirably located two blocks from the hospital, has been rented and furnished, making very comfortable

living quarters for the two head nurses and five pupil nurses. The students are earnest and well qualified to succeed in their chosen profession.

Ladies' auxiliaries throughout the county rendered valuable assistance in a material way as well as in securing the good will of the people—



Fig. 2. Float used on Old Settlers' Day, October, 1910, to bring the hospital day before the public.

At 9 a. m., October 2, 1912, the hospital was opened to admit patients, and the first case was waiting at the door—a child of 2 years. If advertising were ethical, "before and after" photographs, with previous history of this first patient, would make excellent material, being a remark-

one branch furnished a diet kitchen and another bought an ambulance, which tends to illustrate the active interest taken and the recognition given to the institution. It is rather amusing to hear the frequent question, "How did we manage without the hospital?"

With such a favorable outlook after one year's operation, we can confidently hope for steady growth and development and the time when all the sick will not hesitate about the advisability of seeking hospital care.

The hospital is open to all legal practitioners in the county, all having equal privileges. An advisory committee of three physicians, chosen by the medical association, confers with the hospital trustees on matters of mutual interest.

The building is well built, conveniently planned, with excellent lighting and heating facilities. The equipment is modern and quite complete. Some

unusual features for such a "small" hospital in a sparsely settled district are the \$1,700 x-ray outfit, the large sun porches fitted for use during the entire year, the provisions for laboratory work, the delivery room for obstetrics, the electric elevator, the outside telephone connections in each room, the light signal system for calling the nurse, the apartments for the superintendent, and the ideal location, with a beautiful country view on every side. While much remains to be accomplished, everyone in touch with the work feels gratified by the success of this first step toward the solution of the health problem in rural Iowa.

EFFICIENT METHODS IN COST ACCOUNTING AND HOSPITAL FINANCES.

Simplified System Permits Comparisons With Other Hospitals, and One Year With Another—Voucher System for Purchases and Single Pay Roll Saves Time.

By DR. WILLIAM O. MANN.

SUPERINTENDENT OF THE MASSACHUSETTS HOMEOPATHIC HOSPITAL, BOSTON.

THE subject of hospital finances and cost accounting has been so thoroughly covered at previous meetings of this association that I feel that very little can be added to what has already been written.

The New York hospitals, a number of years ago, adopted a system of financial accounting which has been copied by numerous other institutions, so that there is now an opportunity among the larger hospitals to make a comparison between the costs of different departments.

Some institutions have attempted to ascertain the detailed cost of each department—for instance, the cost per 100 pieces in the laundry; the cost of feeding a nurse, as compared with one of the help; the cost of feeding a private patient as compared with a ward patient. I can see that it may be a good thing for the individual hospital to check up the detailed cost from month to month and from year to year, but I do not believe that it follows that, because one hospital can do a certain thing at a certain cost, the one across the street from it can do the same thing.

Some hospitals cater to a large number of paying and private patients, while others cater to only the free class, as in a municipal hospital. It stands to reason that the food cost in the smaller, semi-private hospital is larger than in the free hospital; that the nursing cost per day will also be larger, because the paying patient and private room patient demand and receive more than the free ward patient. I believe in a system whereby one can know the monthly cost per patient and

the monthly cost of food per inmate. If this is done, one can check up with the preceding months and preceding years and make comparisons with his neighbors.

It is well to make a check on the laundry, because if one finds that it costs \$2.50 per 100 to do the laundry in the institution, while it can be done outside for \$1.50 per 100, it seems poor business policy to continue to maintain a laundry. The large commercial plants now have the laundry business down to a science, and are in a position to do it fully as cheaply as can be done by an institution.

At the Massachusetts Homeopathic Hospital we try to check up the cost of different articles by months and years, and we use what we call a comparative expense book for that purpose, an illustration of which is before you (Fig. 1). This book has a column for practically every item that is purchased. Each column shows the months of the year, and has a space for four years opposite each month. You thus have the comparative cost or comparative amounts of supplies before you for four years. It means about an hour's work for two people once a month to analyze the bills. The per capita cost is figured every month, and the food cost per inmate is also figured monthly and placed in this comparative expense book, where it is easily available.

We consider this book a valuable one, as we are able, from year to year, to compare the cost of the different supplies and to know whether we are becoming more wasteful or more economical.

We have also simplified charging supplies to the different outside departments and to the

¹Report of the Committee on Cost Accounting, read before the American Hospital Association, Boston, August 29, 1913.

wards. One requisition weekly is originaly made out by the head nurse, or the one in charge of a department. You will notice by the illustrations before you that there is a column for quantity. one for the name of the article, and a dollar-andcent column. These requisitions are approved by the superintendent and sent to the proper department to be filled. After they are filled they are returned to the office, where a clerk prices up the articles and totals them at the bottom. They are then filed, and at the end of a month the totals are added together and each department or ward is charged with what has been furnished. This system saves a great deal of duplicate writing, and we find it very simple and requiring no extra labor.

York has adopted a system of order requisitions, receipts for supplies and material, and storeroom requisitions which is along the line that I have mentioned that has been carried on for some time at the Massachusetts Homeopathic Hospital.

From Dr. W. H. Smith, of the Johns Hopkins Hospital, I have received the following:

"We are installing a cost clerk, who will be located with the chief storekeeper, and by whom all requisitions will be charged up against the various departments of the hospital, including food—that is, the raw material, such as eggs, milk, etc.—which is sent directly to the wards and other departments. Meats and other foods sent to the main kitchen will be charged up pro rata. The nurses' home, having its own kitchen, will be charged directly for everything it gets. I feel that by this system of charging directly to each department everything except

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Fig. 1. Comparative expense sheet.

During the past summer we have been able to figure the cost of our laundry, and we find that, by including the wages of employees, the board of employees, electricity, gas, steam, water, insurance, and depreciation, the cost per 100 pieces is \$1.34. At the Massachusetts General Hospital the cost of the laundry is \$1.29 per 100.

At the Massachusetts Homeopathic Hospital we have for a number of years used voucher checks in paying our bills, which means that we do not require receipted bills from the firms with whom we deal, and I understand this system is being adopted very generally by other hospitals.

We have also found that by discounting the bills on a ten days' basis we have made a saving in the year 1912 of over \$800.

The Presbyterian Hospital in the city of New

the cooked food, and charging each department pro rata for the number of people in that department, either employees or patients, we will have eliminated as much of the guesswork as is possible, and that we have brought down the question of cost accounting to a practical basis without carrying it too far, which I think would happen if we attempted to gauge the prices of the various cuts of meat going to the different departments and to weigh out the vegetables, etc., from the main kitchen."

Dr. Howland, at the Massachusetts General Hospital, writes as follows:

"Bills Payable.—Bills are paid as heretofore at various intervals during the month in order to take advantage of the discount offered by dealers for prompt payment. In the past a recapitulation of all bills paid each dealer each month was made on a form of voucher and this voucher sent to the dealer at the end of the month, to be receipted and returned, after which it was filed with the bills as evidence of payment. These vouchers were fre-

quently held by the dealers, and this made it necessary to write for them in order to complete the files. Preparing and mailing these vouchers, together with checking their return, consumed considerable time and also cost the hospital about \$5 a month for postage. These vouchers have now been abolished as entirely unnecessary, thus making a saving in labor and about \$60.00 a year in postage. The canceled check is now considered by the leading business houses as sufficient receipt.

"Bills Receivable, Patients' and Doctors' Accounts..—All money from whatever source passes through the hands of the cashier, and by her is distributed on a daily sheet to the various departments to which it belongs. This sheet is balanced each day, and a bank deposit slip to correspond in amount with the daily sheet is made.

"A petty cash fund is carried by the cashier, from

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4	Pins RubberShets	3.	00	10	flasses flates B&B
16	Sheets	10.	04	6	- Small
12	Spreads Towels Bath	2.	50	3	Pitchers Self Shakes
18	- Disk - Hand Tray Cloths: Wash Cloths	2.	18	13	Saucers
		27.	89		
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Fig. 2. Housekeeper's order blank.

which are paid all small cash bills, which are presented at the office. This fund, when depleted, is made good by check and entered in voucher register as any other bill. This method reduced the petty cash entries from one hundred to one hundred and twenty-five down to four or five. A receipt is now taken for every cent paid out, and these are filed with the bills.

"Pay Roll.—This was formerly handed in on the morning of the twenty-seventh of the month by the heads of departments, who anticipated that everyone would work the remaining three or four days. In the event of anyone being absent after the pay roll was handed in, a slip was sent to the office stating that the employee had lost time, beginning at a certain time. If this employee returned to work before the first of the month, another slip was handed in showing the time of returning to work. The names of employees were all copied from the sheets re-

ceived from departments onto another sheet, on which was entered the total wages due, and this sheet was signed by the employee.

"Our new sheets are filled in by the department heads, showing the name, position, days lost, days employed, and rate. The total wages are figured in the office and entered directly onto the sheets received from the departments. This saves copying over 400 names, which in itself takes considerable time. The pay roll is now handed in the last day of the month, which does away with the numerous slips concerning lost time. The information contained on this sheet regarding days lost and employed, deductions, etc., is of much assistance to the paymaster, as he can readily make explanations to any employee who believes that his wages are incorrect, where formerly it was necessary to send them to the office for explanation.

"Journal and Ledger Accounts, -The journal entries have been abolished as serving no useful purpose. Ledger

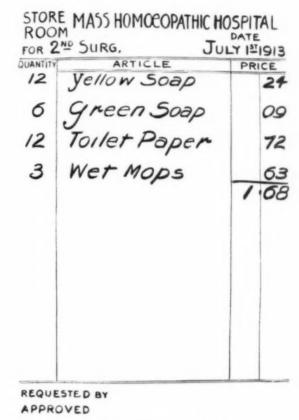


Fig. 3. Store room order blank.

accounts which were kept with the various items shown on the financial statement, and which are used solely for the purpose of getting a trial balance every quarter, have been discontinued, and in place of these a recapitulation is made in the back of the debit cash book and voucher register."

At the Massachusetts Homeopathic Hospital we have also come to the conclusion that these journal and ledger accounts are of no use, and we have done away with them.

It is well for every hospital to adopt a simple form of cost accounting or comparison of costs of different articles purchased in order that they may know just how much they are spending for each item, and in order that they may compare the cost of these items with what other hospitals are doing. If one hospital finds, for instance, that the medical and surgical supplies per patient are costing more than at several other hospitals, it is wise to find out whether the buying is being done at a disadvantage, or whether the supplies are being used too generously. This is a comparison that should be made, I believe, by every hospital annually in order that the management may know just what is being done.

One can readily see that the cost of heat and light will vary according to the construction of the individual hospital. A hospital on the pavilion plan will cost more to heat than a hospital built on the block plan, but with the medical and surgical supplies, laundry, housekeeping supplies, etc., a comparison can easily be made.

For anyone who is interested in the detailed accounting of each department, I wish to refer to a book just published during the year 1913, "Cost Accounting for Institutions," by William Morse Cole, assistant professor of accounting in Harvard University. This book goes into detail, and shows a very elaborate system of cost accounting. Personally, I do not believe that it is necessary or wise to go into this detail, because the results obtained do not offset the extra cost of the book-keeping and clerical hire.

THE ROENTGEN RAY DEPARTMENT IN THE SMALL HOSPITAL.

Machine Not the Most Important Feature of Equipment—Accessories Quite as Necessary—Full Complement to Do Good Work—List of Essentials.

BY E. W. CALDWELL, M. D., NEW YORK.

I is no easy matter to plan or to give advice for the equipment of a roentgen department for a large hospital, but it is much more difficult to know what to recommend to those about to equip a small hospital and one is tempted to quote Punch's celebrated advice to those about to be married—"don't."

The old adage to the effect that anything worth doing is worth doing well is true at least for those things that have to do with the healing art, and especially of roentgen work, which is one of the things that may be useless or even dangerous unless it is well done. Unnecessary suffering, deformity, or loss of life may result either from error or from failure in roentgen diagnosis.

In roentgen therapy equally distressing results may follow sins either or omission or commission. The writer has seen a number of patients who have been disfigured or disabled for life by incompetent therapeutic applications of x-rays. We should not forget that incompetent roentgen work may be quite as dangerous as poor surgery or the incompetent use of poisonous drugs. It should be self-evident that x-ray examinations and treatment, like any other medical examinations or treatments, should be done by persons of medical training who have acquired practical knowledge of the special subject, and should not be intrusted entirely to photographers, however skilled they may be in photographic technic.

There is still much to be learned about the interpretation of x-ray shadows, and it would be well if hospitals, large and small, gave more assistance in the development of this art by cooperating with roentgenologists who have suitable training and ability for scientific work.

A reliable roentgen department is a distinct addition to the armamentarium of a hospital, and in many cases gives valuable help which can be obtained in no other way. Reliable x-ray work is unfortunately expensive, costing at least twice as much as the kind of work usually done in hospitals.

Cheap roentgen work is almost invariably incompetent work, and the comparative inefficiency of the roentgen departments in most hospitals, great and small, is due largely to inadequate provision for expense of equipment and maintenance. In the less difficult x-ray work, such as the examination of bones and joints, satisfactory results may be obtained with a comparatively cheap and simple equipment, but elaborate and expensive equipment is important where much difficult work is to be done.

No hospital is too small to do good work, both in diagnosis and treatment, if it can devote 600 or 800 square feet to an adequately equipped plant and provide for its intelligent direction and maintenance. I should, however, think it not advisable to install roentgen ray apparatus in any hospital unless, first, some competent medical graduate will take an active interest in the work; second, unless floor space of at least 450 square feet can be provided for the equipment; and, third, unless an ample sum of money is available, both for equipment and maintenance. The medical officer in charge of the roentgen department should preferably be one who is devoting all of his time to x-ray work.

In many small hospitals this degree of specialization will not be possible, and the roentgen work will fall naturally to one who may combine with it pathological or clinical laboratory work.

It is true that certain metropolitan hospitals have not yet abandoned the old picture shop idea of roentgen diagnosis, and employ only electricians or photographers for the x-ray examination and treatment of patients. Some of them even take advantage of their immunity from malpractice suits to exploit the incompetent work of these artisans for profit by selling so-called x-ray pictures to all who apply. Through immunity from taxation, hospital discounts, the use of cheap help and cheap materials, and the misappropriation of gifts of apparatus and money intended for charity, they are enabled to sell their inferior work in competition with practicing roentgenologists at a price less than the actual cost of reliable service. This obviously unethical practice is not recommended to any hospital board that desires to give efficient service, and to deal honestly and fairly with its own patients or with the public, in the matter of roentgenology.

In hospitals where only occasional use is made of x-rays the whole equipment for diagnosis and treatment can, if necessary, be placed in one room, which should contain at least 250 square feet. The only additional space absolutely necessary will be about 100 to 200 square feet for dark room and about the same amount for record room, filing cases, and illuminating boxes for plates. It would be better to have still another room for the generating apparatus and its controlling device. This room may be separated from the patient's room by a protective partition provided with lead glass windows and lined with lead. With this arrangement the patients are not disturbed by noise and sparks of the machinery, and the operator may make exposures in safety while keeping the patient, the x-ray tube, and the meters under close observation.

The arrangement of the rooms, as well as the selection of the equipment, should be left entirely to the one who is to take charge of the work. Architects seldom provide in hospital plans either sufficient space or a practical arrangement of rooms for roentgen work.

In the selection of equipment undue attention is usually given to the electrical apparatus and too little to the accessory appliances, such as tube holders, tables, protective screens, aprons and gloves, meters, dose measuring devices for treatment, etc. The manufacturer with a machine to sell usually gives the false impression that his machine is a complete x-ray outfit in itself.

The appliances absolutely essential for produc-

tion of x-rays are the x-ray tubes and some device for delivering electrical currents averaging from one to fifty or more milliamperes at a potential difference of from 60,000 to 90,000 volts.

The x-ray tubes are perhaps the most essential and the most important part of the equipment. Without good tubes it is impossible to obtain good work. It is desirable to have at least ten or fifteen good tubes, and to keep this number by replacing every tube as soon as it is broken or worn out. This makes it possible to select for different kinds of work the tubes which are most suitable. The practice will prove an economy in the long run because the life of x-ray tubes is much longer when they are not overworked.

It will be found a great convenience to adopt some standard and stick to it rather than to assemble a varied collection of tubes of different styles, makes, and sizes. For most work I prefer tubes with seven-inch bulbs, provided with heavy copper targets and tungsten buttons at the focus point. For fluoroscopic work and for treatment some of the water-cooled tubes are very satisfactory, but I think they are not necessary.

Uniformity is desirable not only in the size of the tubes, but in the type of regulator with which they are supplied. Two types of regulators may be considered. The spark regulator, which has been in common use for many years, is perhaps the most popular and the most reliable. Recently the mercury seal air regulator of D. MacFarland-Moore has been brought to a practical degree of efficiency for x-ray tubes by Heinz, Bauer, Baker, and others. The osmo regulator is less convenient than either of the two mentioned, though it is still used by a few makers. The cost of fifteen good tubes will be between \$300 and \$400. The best American-made tubes are much superior to those made abroad.

The selection of the electrical generator will depend somewhat on the character of the electric lighting or power circuits available and on the class of work which it is desired to do. Practically we may consider only two types—the induction coil with interrupters and the transformer with rotary rectifier, or the so-called interrupter-less machine.

For roentgenographic work the so-called interrupterless machines are preferable, and this is especially true if only alternating current is available. These machines require less adjustment than the induction coil apparatus, and are easier to handle. The time of exposures is somewhat less with these machines than is usually obtained with induction coils.

For all work in which it is desired to operate x-ray tubes continuously for a considerable length

of time the induction coil with mercury jet or mechanical interrupter is preferable. Such an outfit is more satisfactory for fluoroscopy and for some roentgen therapeutic work than any interrupterless machine I have seen. The same induction coil operated with an electrolytic interrupter may be used also for fairly rapid roentgenographic work. The ideal arrangement is, of course, to use the induction coil with mechanical interrupter for fluoroscopy and other work requiring continuous running of tube, and to have an interrupterless machine in addition for making the plates. A very good induction coil outfit can be bought for about \$500, and most of the interrupterless outfits cost about \$1,000.

The accessory appliances needed will include at least one table for radiographic work, and it is really difficult to say which of those on the market is the worst. Those which can be had from the dealers cost about \$250 each.

There will be needed at least one or two tube holders, and those which carry heavy lead glass bowls to surround the tube and shut in the stray x-rays are very convenient. These may be had from different makers at prices varying from \$50 to \$250, according to the attachments, workmanship, etc.

If fluoroscopic work is to be done, it is advisable to provide lead cloth aprons and gloves for the operator. Some of these give very efficient protection and others practically none at all. It will be necessary to test each sample by observing whether the fluorescent screen is illuminated by rays which have passed through the protective cloth. Good aprons can be bought for about \$15 to \$25 each, and the gloves ordinarily cost about \$6 to \$7 a pair. Shields or screens of wood, lined with lead, for protecting nurses and others who frequently visit the roentgen ray room are very desirable, and these are made by practically all the dealers at prices ranging from \$40 to \$75. The thickness of lead should not be less than about one-sixteenth of an inch, which I think is sufficient, although many workers prefer to use lead one-eighth of an inch or even one-fourth of an inch thick.

If a special study of the heart is to be made, an orthodiagraph may be purchased, but I think this is not an essential instrument. The best ones are made abroad and cost about \$250 each. For examinations of the heart, lung, and stomach it will be necessary to provide some sort of vertical fluoroscopic arrangement. This may be obtained from the different makers at prices varying from \$250 to \$900. My impression is that the lower-priced ones are about as effective as the more expensive ones and sometimes more convenient.

None that has as yet appeared is really good. For fluoroscopy with patient recumbent there are a number of tables made with fiber or canvas tops, and provided with sliding tube holders underneath. Perhaps the best known of these is the Haenish trochoscope, which may be obtained in Germany and costs in Germany the equivalent of about \$200. Some of the newer appliances, such as the orthoscope, enable one to do fluoroscopy in both the horizontal and vertical positions. These machines cost about \$600.

For fluoroscopic work the best fluorescent screen is of barium platinum cyanide, which costs about 25 cents per square inch, or about \$75 for a screen 14x17. The best American-made fluorescent screens have the salt held in paraffine. They are more brilliant than the foreign screens I have seen, but they are much more easily scratched than the foreign screens, which are made up with some hard varnish. The hard varnish seems to gives a coarser grain and also to cause the salt to deteriorate more rapidly than paraffine. There are two other salts used in fluoroscopic screens. One of these is a white material the chemical composition of which is a trade secret. This is much used in Germany because it is cheaper and is said to last longer. It has the disadvantage of phosphorescing or remaining illuminated after the x-rays have stopped, and I think it is in other respects not quite so good as a good American-made barium screen. All fluorescent screens should be carefully mounted with a lead glass covering to shield the observer from x-rays passing through the screen.

Besides the appliances mentioned above, there will be needed a large number of little things, such as lead numbers and letters for numbering and initialing plates, meters, dose measuring devices, and lead-lined boxes for storing exposed and unexposed plates, paper envelopes and cassettes for holding plates during exposure, intensifying screens, record books, illuminating boxes, stereoscopes and stereoscopic plate changing devices, special devices for localization of foreign bodies in the eye, etc.

The dark room equipment is a very important matter, but this can be furnished by any dealer in photographic supplies. I would recommend tank developing, with individual frames for holding plates. In 1902 I recommended that dark rooms be painted with pure red lead paint. This color is much better than black because it makes the room much easier to illuminate by ordinary light, although it reflects practically no light that will affect a photographic plate.

The cost of a fairly good dark room equipment need not exceed \$250. Running water must be

available, of course, and it is well to provide an electric fan for drying plates. The ventilation of the dark room should be looked after, and in this connection I would recommend light-tight ventilators to be placed in the transoms and windows. These are furnished by makers of galvanized iron cornices, etc.

From the foregoing enumeration it will be seen that the cost of a fair x-ray equipment will be at least \$2,000 or \$3,000. There are some private laboratories which have cost more than \$20,000.

The cost for maintenance will depend much on the amount and character of the work done. Simple work, such as examinations for fractures, foreign bodies, etc., is comparatively inexpensive, and can be done very well with cheap equipment. Examinations of the urinary tract, the accessory nasal sinuses, and especially the digestive tract, are very difficult and expensive, and for such work one needs the most perfect equipment possible.

In conclusion, I would advise that, in any small hospital the roentgen department be organized with a view to attempting only such work as it can do well, but of course it is desirable to be ready for the emergency case of any sort that may occur. Examinations of the difficult cases should, when possible, be made by an experienced roentgenologist in a very well-equipped laboratory. Treatment may be given satisfactorily with a very simple equipment, but it should never be undertaken by anyone not specially skilled in the work. The exceedingly bad repute which x-ray treatment has had in general is due largely to very incompetent work.

Finally, I should say that, for use in this country, American-made apparatus is preferable to that of foreign make, although some exceptions to this statement must be made. Some of the English and German induction coils and mercury interrupters are excellent. Certain appliances, such as the orthodiagraph, clinoscope, orthoscope, etc., are more elaborately made abroad than here. The intensifying screens of German make are perhaps a little more durable than those of American make. Until recently the best of the lead impregnated protective cloth has come from Germany.

After Florence Nightingale had returned from the Crimea, fuller of honors than any soldier who had fought there, she was asked to help clean up London, whose hospitals at the time were the breeding ground of infections of all kinds, including gangrene. She accepted the call and demanded "soap, water, and sunshine." We have followed many false gods of cleanliness since that day—disinfectants and bactericides whose name is legion—and have now found our way back again to Florence Nightingale's shrine of health, "soap, water and sunshine."

THE WHITE MAN'S BURDEN.

Some Embarrassing Things Happen When the Untutored Savage Tries to Absorb the Customs of His White Brother.

A rather unexpected hindrance to the white man's good offices in the Philippines has recently presented itself in the Bontoc Hospital, located among the Igorrotes of northern Luzon. Three natives—a young girl, a boy, and a man—were brought into the hospital at various times lately, and in each case a leg was amputated for one reason or another. Now all these unfortunates and the balance of the tribe blame the white man and his hospital for not letting them die, on the ground that they are not only a burden to themselves, but a nuisance in the community.

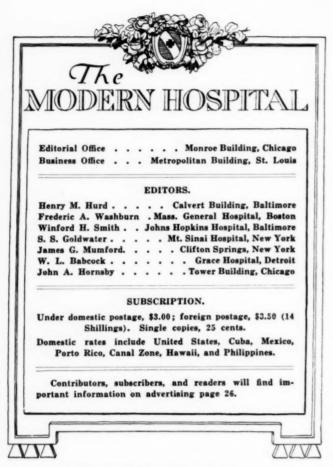
Social service has been set to work in all the cases, however, and the natives are to get a lesson now on the virtues of reeducation, and who shall say that the care to be bestowed on these unfortunates will not make them, even in their handicapped condition, more valuable members of the community than their limb-perfect fellows?

This curious turn in affairs, that has thus early injected the most advanced sociology into the last home of savagery, reminds one of an incident that occurred in Alaska in the early days of American domination. Far up on the Koyokuk River, under the frowning peaks of the Arctic Rockies, there dwells the tribe of the Koyokuk Indians, perhaps the best specimen of the red man, physically speaking, that remains today anywhere. Along about 1870 a few white miners found their way up into that bleak country, attracted by considerable quantities of gold that the Indians were bringing down for trade. One day an Indian killed a white man, and, as Alaska was then under the jurisdiction of the Oregon laws, the culprit was sent to Portland for trial. He saw the wonders of the white man's world and had great experiences, not the least pleasant of which was a five-year term in the Oregon penitentiary. He finally got back home, where he was the hero of the hour. Soon another white man was killed, and then another, until several men had come to grief without very much excuse for the killings. At this stage an agent of the United States Government was sent to the tribe to ascertain what the trouble was. An interpreter was taken along. At the powwow that followed, the interpreter explained the matter as stated by the chief: "He say young Indian kill white man; he go Portland. White man good friend to Indian; Indian good friend to white man. Portland good place too; plenty to eat; much noise in Portland; Indian have fine time."

Obliging Girls in Ashton.

Salem (Ore.) girls raised \$10,000 for a hospital by selling kisses at \$1 each. If Ashton girls had received that price for kisses distributed this year, sufficient funds would have been raised to have built a dozen hospitals, twelve miles of hard roads, and a water works system, and have left a balance of \$99.98.—Ashton (Ill.) Gazette.

The new California workingmen's compensation act provides that any man hurt at private work shall be paid two-thirds of his regular wages. If his disability is permanent, he is to have 65 percent of his former wages for a period of 240 weeks, and for the balance of his life 40 percent. If he is killed, his widow or other dependent will receive a sum equal to three times his average annual earnings.



Hospital Medical Statistics.

The financial statistics of hospitals have always received careful attention, and the efforts of superintendents, of boards of trustees, and treasurers have been unwearied to make them plain to the public and to each other. No one ought to complain of this, because it is often the crux of hospital continuance, and the tangible evidence of success and prosperity. Thanks to the efforts of Burdett in England and of Fisher and others in our own country, we have at present an excellent system of comparing the pecuniary results attained by different hospitals and the cost of the daily, monthly, or yearly maintenance of patients. We can also compare with facility the movement of population, and judge with more or less accuracy of the amount of good work which different hospitals accomplish.

When, however, we attempt to ascertain certain necessary details as to the results of the medical work, we find ourselves confronted with vague and unsatisfactory and often misleading conditions. If we attempt to ascertain from what forms of bodily disease the inmates of a given hospital suffered, and what became of them, we cannot tell from the tables, how many died, how many recovered, how many remained under hospital care, or were transferred to other services, because the data in the majority of istances are

lacking. The column assigned to "unascertained diseases" is large, and the proportion between it and those devoted to ascertained diseases is quite disproportionate, and we rarely have the satisfaction of knowing what is the fate of the patients who, like the John Does and Richard Roes of the lawyers, flit in and out of hospitals.

An eminent statistician once remarked that the medical tables of hospitals were worthless because of the indefinite information which they supplied to the student, who, like the man from Missouri, wished to be "shown" the comparable results of hospitals of the same rank, presumably admitting the same forms of disease.

Hospitals consequently need new forms of tabulations to present results which may be compared and analyzed by students of vital statistics. To this end we need to employ a uniform nomenclature of disease which may be adopted throughout all hospitals. This has recently been supplied by Cressy L. Wilbur, of the Public Health Service in Washington, and his nomenclature should be promptly adopted by every hospital, large or small, in recording hospital admissions and in making the returns of deaths. There ought to be no hesitation in adopting this nomenclature, because it may now be considered official and as nearly final as such a list can be. If future changes are made, they can be added with a minimum of effort. In fact, the watchful care of Mr. Wilbur will be a guarantee that no unnecessary changes are made. The use of the new nomenclature of disease should become imperative and binding on all hospital physicians.

The next and equally important step is to so arrange the tabulations that patients may be divided by races and sexes, to show how many of each race and sex suffering from diseases like pneumonia, cardiac troubles, tuberculosis, typhoid fever, etc., have been admitted and what became of them, whether discharged as recovered, improved, or unimproved; whether they were transferred to other services; whether they died or still remained under treatment at the end of the year. In this manner the data of each disease may be spread before the reader in every table without any possibility of error. The tables will, in fact, prove themselves, table by table. The desirability of the change suggested will be evident to all.

Every hospital also should have a registrar to supervise all tabulations in order to ascertain that they are correctly and wisely made. In many hospitals the preparation of statistics is committed to a clerk who is not familiar with the nomenclature of disease and often does not appreciate the object of medical statistics. A trained medical statistician, if possible, should be secured

for this work, or, if this is not practicable, a member of the staff who has a taste for such labors should undertake it. At present many valuable vital statistics are lost, and the true work of the hospital is obscured and belittled by indefinite and worthless tabulations.

It is to be hoped that the American Hospital Association may give attention to this important matter at its next annual meeing.

HENRY M. HURD.

Sanatorium Equipment—Psychotherapy.

In previous issues we have discussed the nature and methods of sanatoriums. There remain many other sanatorium features about which more or less discussion centers, notably the equipment of a sanatorium for its proper workthe care of invalids. Aside from and in addition to the physical and the medical and surgical departments, on which all the work must focus, there are many subordinate departments which demand attention, not the least among them being the department of psychotherapy. Observe that this term psychotherapy is often a rather nebulous term, and the psychotherapeutic department a somewhat nebulous department. This must needs be so, for psychotherapy enters into the treatment of all disease and into the proper activities of every thoughtful specialist. One might, were one so inclined, assign all psychotherapeutic work to the trained nuerologists and alienists, but such assigning is not creditable to the intelligence of physicians, and merely demonstrates a lack of therapeutic curiosity and devotion. Later we may have some words to say on the special value to a sanatorium of a neurologist's work, but just here and now we shall point out one peculiar feature, of importance to all practitioners. We refer to the correlating of diagnostic evidence, and the guiding of the patient into an attitude of intelligent cooperation in and confident outlook on the progress and event of his own case.

Not long ago we had occasion to observe a patient the victim of tabes, multiple arthritis, and the opium habit. He was a young, clear-thinking man, and was sincerely solicitous about his own condition and prospects. He came to the sanatorium with his head full of talk about lues, girdle pains, and the "gold cure." He was studied by a competent internist, a neurologist, an orthopedist, and a surgeon. The usual tests, investigations, and x-ray examinations were made. After four or five days the internist, whose special charge he was, called together his consultants for a final talk to decide on the best line of procedure. They

were met by the chief-of-staff, who had that morning received this note from the patient:

"Dear Doctor: I have now been here five days. I have been examined by Drs. Boston, Utica, Buffalo, and Cleveland. They have kept me in bed; they have asked me countless questions; they have looked at my blood and my excretions; they have x-rayed me; they have tested me behind and before, and they have laid their hands upon me. But they have told me nothing. Sleep has left me. I am nervous, uncertain, and despondent, and think of going home. What does it all mean? Where am I at? Truly yours, Fortiter in Re."

The little note tells its own story, and the moral applies to all patients, whether in sanatoriums or elsewhere. The first element in psychotherapeutics, as in all practice, is the securing of the patient's confidence, the demonstrating to him the nature of his ailment, the holding of his appreciation, and the leading him along a clear path of treatment. Correlate your programme, support the patient's intelligence, and never for a moment allow him to enter the land of gloomy neglect or groping puzzlement. This is the primary lesson of psychotherapeutics.

JAMES G. MUMFORD.

All-White Operating Rooms.

In a recent arraignment of "all-white" operating rooms, so dear to the hearts of hospital trustees and some superintendents, Dr. Harvey Cushing, chief of the surgical staff of the Peter Bent Brigham Hospital, Boston, projected into the arena of serious discussion a matter about which many of us have been thinking for some time—indeed some action has already been taken.

Carrell, at Rockefeller, has been using in his animal surgery, for some years, black cloth to cover the animal instead of white, and his walls are dark green. Dr. Corwin, chief surgeon for the Colorado Fuel and Iron Company, lined the operating room of the company's new hospital at Pueblo with lead-colored sheeting. A number of hospitals have followed this suggestion; and others have turned to green.

Of course white is a clean color, and an all-white operating room will lend itself to habits of cleanliness better than any other color, because dirt of any kind will obtrude itself to such an extent that the nurses or cleaners will have to remove it. Boards of directors like to show their beautiful, white, clean looking operating rooms, and usually the operating suite is one of the show places of the hospital. But this isn't all there is to it, nor are these arguments in favor of white the most convincing.

It would seem that the surgeon whose success is dependent in a very large way on his eyes

should have an interest in this matter, and that his comfort and the conservation of his energies are entitled to consideration. Shop efficiency nowadays takes great consideration of the lighting of work benches and the saving of workmen's eyes. Is not the surgeon also a workman, and is not his work about as important as any we can think of?

White is hard and hurtful and tiring on the surgeon's eyes—just think of it, he is looking into a dark cavity, or into a wound blurred with blood, and his success, in a large measure, will depend on how well he can see and identify minute structures. When his eyes tire for a moment and he is trying to "see" with his fingers, he looks away from the field for an instant's eye rest. What does he see? A white operating sheet, whiterobed interns and nurses, white floor, white walls, white ceiling, white furniture—nothing on which his tired eye may rest except white; white, emphasized with the glare from the windows. And this goes on, not for a few minutes, but sometimes for hours; some surgeons work from 8 to 1—one patient after another, and always in the white glare.

Is it not time we applied a little shop science to our operating rooms and quit our "window dressing" methods in hospital work?

"Self-Supporting" Charity Hospitals.

The newspapers have reported the close of "a campaign" in Cleveland during which approximately \$300,000 was raised for St. Vincent's Charity Hospital—\$58,000 to pay off an old debt, and the balance to be employed in the building of another pavilion for patients. The most interesting note in the announcement is the "hope" that the new building will make the hospital "self-supporting." Of course the new building will do nothing of the sort, and every well-informed hospital administrator in the land knows it. The American people should get the notion out of their heads that they can eat their apple and still have it—that they can do charity without paying for it.

At St. Vincent's Hospital, and at every other hospital in this country where charity work is done, one of three things is happening: 1, they are taxing sick people who can afford to pay for their own care, and making them pay for the care of some other sick person who cannot afford to pay; or, 2, they have an endowment out of which the charity funds canbe taken; or, 3, they have an annual deficit which must be made up by calling on the public.

Is it not time that hospital boards and church organizations and benevolent societies dealt fairly by the public and stated the facts of the case when soliciting funds for charity work? We do not believe that the authorities of St. Vincent's Hospital are making any false representations, but we do believe that the people who have been active in this latest campaign have either been fooling themselves or fooling others, or both.

It is an attractive and noble charity—giving for the benefit of the suffering. People ought to be encouraged to do so, and they ought to understand all the time that paying for a building for a hospital is an initiation fee that entitles them to membership in a most worthy cause, but whose annual dues must be called for regularly, and that, if there are no such dues, either the purposes for which they joined the order are not being fulfilled, or that the dues are coming from sources that they ought to know about, and which they would not be likely to approve.

There is not a doubt that St. Vincent's Hospital is doing a fine charity; there is not a doubt that every dollar given to the sisters will bring the largest measure of good to the suffering poor, but let not the good people of Cleveland salve their consciences with the thought that they have done all they need to do, and that the hospital now will be "self-supporting."

"The Modern Hospital" Secures Miss Riddle.

It is with the greatest elation that we are enabled to announce this month an increase in the editorial staff of The Modern Hospital by the addition of Miss Mary M. Riddle, who will, beginning with the February number, have entire charge of the department of nursing. The hospital people in every part of the world know Miss Riddle, and she needs no introduction. Those who have the good fortune to know her personally love her, not alone for her splendid qualities as a leader in the administrative and nursing thought of our time, but for herself as the finest type of womanhood, as a friend, and good comrade.

Miss Riddle is a graduate of the Boston City Hospital, where for some years after her graduation she served as head nurse at the South Department of that fine institution, in charge of contagious diseases—600 beds. She has been president of the American Hospital Superintendents' Association, president of the American Nurses' Association, and president of the Massachusetts State Association of Nursing. She is treasurer of the Isabel Hampton Robb Educational Fund, which has a scholarship in the Teachers' College of Columbia University, in the School of Civics and Economics of Chicago, and in the post-graduate school of the Boston City

Hospital. For ten years she has been treasurer of the *American Journal of Nursing*. She is superintendent of the Newton Hospital, at Newton Lower Falls, Massachusetts.

Miss Riddle enters upon her duties in The Modern Hospital with no prearranged policies of any kind, and with the determination to build up a department that shall be of the broadest service to those engaged in nursing in all the varied aspects of that profession.

We be peak for Miss Riddle the active cooperation of all hospital people, who value progress and efficiency, as we know she already has their highest respect and confidence.

Dr. Montessori's Visit.

Dr. Maria Montessori, of Rome, who has become famous as a teacher of backward children, has been touring this country lecturing on her methods of work. The proceeds of the tour, we are informed, are to go toward the foundation of what Dr. Montessori calls a 'laboratory school' in Italy, in which it is proposed to conduct children through a ten years' course.

Dr. Montessori's lectures were not without a good deal of interest, not to say excitement. Her proposals concerning the teaching of children at home failed to appeal to a good many mothers who heard her, and a common comment was that the whole home where these children were would have to be given over to the education of the children, accompanied by a cessation of all other social and domestic offices. There is no doubt that people who have brought defective children into the world owe them unremitting care, but unfortunately the great majority of these parents belong to the class which can least afford the necessary time, because they must work very hard, and usually at very unprofitable employment, to satisfy the physical, not to say intellectual, needs of the family. It seems the state, or at least the community, must do most of this work, and in special schools conducted for the

By the way, why is it, whenever a person does something in Europe, he or she straightway comes over here for a lecture tour, "the proceeds of which," etc.? We, in this country, are a rather ingenious people ourselves, but it is very rare that we go to Europe to find the wherewithal to carry on our developmental work, and, where we do, we generally come back with a large fund of experience; but "the proceeds" can be employed only to increase an otherwise limited amount of contentment with what we have at home.

What Is Hospital Advertising?

On the heels of our recent discussions, at the American Hospital Association convention, on the subject of "What is proper advertising for hospitals," comes a decision by the London *Times* and other noted English newspapers that news of the hospitals, annual reports, and the like belong strictly in the advertising columns, to be paid for just as the exploitation of any other business.

Coming, as this decision does, just at a time when the hospitals of Great Britain are laboring under the necessity to readjust their whole organizations to the new conditions imposed by the Lloyd-George insurance and panel laws, the hospital people naturally feel that they are being actually persecuted. If the hospitals were moneymaking enterprises, the decision would seem to be just; but most hospitals, especially those of Great Britain, are endowed and maintained for the benefit of the sick poor, without profit of a single cent to anyone.

This is indeed a commercial age, but up to this time the hospitals seem to have been free from the charge of commercialism, and at least within certain limits the newspapers have accepted a generous responsibility for the promotion of those things to which the people are disinterestedly committed. Fortunately in this country the hospitals do not depend to any very great extent on the daily papers, and those great enterprises have always done more than has been asked of them. It may be hoped that the same generous understanding will continue, and that the hospitals will have the same fine encouragement they have had in the past.

A Test or A Cure-Which?

Patients at the mental farm at Coquitlam, B. C., won three first, five second, and one third prizes for Clydesdale and Percheron horses at the Chicago stock show that has just closed. Dementia has shown itself in connection with "back-to-the-land" movements oftentimes in the past, and it may be supposed that farming has sometimes been the cause, or has been an accessory after the fact, of dementia. It may be that the patients at Coquitlam are homeopaths, and have been cured by the hair of the dog that bit them—or is dementia a prerequisite to successful farming? Some of us who have tried it and failed would like to think so.

"Agriculture as a self-sustaining means for curing dementia seems to have won a conspicuous victory," asserted an official of the institution, who was in Chicago with the exhibits. "The results of our work in British Columbia indicate the possibility of a worldwide change in the administration of state institutions for the care of those thousands who are within the twilight zone of mental capacity."

The German View.

A German physician who was guiding Dr. R. L. Thompson, of St. Louis, through one of the great Berlin municipal hospitals, was asked how the city could afford such magnificent institutions.

"We cannot afford to be without them," was the reply; "we have to take into consideration the following points, if for no other reasons than those of actual economy: first, to get the patient well as soon as possible, so that the institution is not charged for his care any longer than necessary; second, to get him completely well, so that he will not return—at least for the same disease; third, to have available such scientific methods for the study of his case as will enable us to better treat the next similar case."

This sums up the whole argument for efficient hospitals. Of course, it does not explain the large sums expended in Germany for monumental architecture, but it leaves nothing to be added in favor of pathological laboratories, hydro- and physico-therapeutic apparatus, facilities for serving special diets, and for the most perfect sanitation that modern architecture can devise.

A New Series of Papers.

It gives us great pleasure to announce a series of seven papers, to begin with the February number, on "The Administration of Industrial and Reform Schools," by Mrs. A. M. Clay, superintendent of the Missouri State Industrial School for Girls at Chillicothe.

Mrs. Clay has won for herself a very large place in the hearts of the people of Missouri for her big and broad philanthropy in caring for the most exacting and delicate class of the wards of the public, as she has earned the absolute confidence of the state authorities for the businesslike administration of her important charge.

Mrs. Clay has served a long stewardship in the field of her chosen vocation, and her papers are certain to be interesting and instructive, as may be judged by the subjoined titles:

- 1. Progressive Details in Administration.
- 2. Student Government.
- 3. Repression Versus Expression.
- 4. Necessity for Loyalty.
- 5. To Get Obedience, Give Obedience,
- 6. The "Why" of Institutional Failures.
- 7. Daily Routine in Administration.

Who Pays for Charity?

It is a mistake for hospital administrators to attempt to prove to the public, in soliciting funds, that they can do a large amount of charity work and at the same time be self-supporting. People of means are intelligent these days, and they know very well that charity service costs money and that, if the hospital does not get the money by voluntary subscriptions or out of its endowment, it must come from patients who happen to be able to pay. The principle of taking more money from a pay patient than the service to him actually costs, and applying it toward the expense of a charity patient, is fundamentally wrong. We should all agree to charge patients who are able to pay, for the actual service to them as indicated by our accounting system; and obtain by frank avowal the necessary funds for charity service from well people who realize just how their money is to be used. Such a policy will succeed with people who have sense enough to own money to give away for charity.

Our January Cover Design.

The cover design this month is an etching of the administration front of the new Cincinnati General Hospital, executed by Mr. Hugh M. G. Garden, whose dainty art gems on the covers of previous numbers have already called forth the liveliest interest and praise.

This splendid hospital, now nearing completion at a cost of approximately \$5,000,000, is one more response to the modern demand that the sick poor shall have as good care as those who are able to pay for the privileges of the most elaborate and exclusive private institutions.

Dr. Holmes and the architect, Mr. Hannaford, have earned the greatest gratitude of the people of Cincinnati, as they are certainly the recipients of the admiration of hospital experts everywhere, for the completeness and efficiency of their work. A most interesting illustrated story of the new hospital appears elsewhere in this issue.

Because of the pressure of more immediately important matter, it has been necessary to omit the paper scheduled for this month on "The Equipment of a General Hospital." This paper will appear in February.

In another column, under the head of "Letters to the Editor," will be found a letter from R. F. Almirall in regard to an item referring to the new Sea View Hospital of New York that appeared in the September number of this journal. We gladly give space to this letter in justice to Mr. Almirall.



Albert Allemann, M. D., Foreign Literature.

Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.

Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

The Sanatorium Benefit in Ireland. Robert J. Rowlette. Tr. Roy. Acad. Med. Ireland, Dublin, 1913, XXXI.

The national insurance act has inaugurated a new movement against tuberculosis, and Dr. Rowlette claims that without hearty cooperation of the medical profession it will be impossible to direct the movement on right lines. He appeals to members of every rank of the profession to study the opportunity offered and the best way of assisting in the important work. An interesting discussion follows his paper.

Clubs as Hospitals in War. Colonel Valentine Mathews, late R. A. M. C. Vol. Brit. Med. Jour., London, 1913, November 22.

The selection of the Automobile Club as one of the general hospitals provided for the territorial force in the London district in case of invasion meets with the approbation of the writer, who advocates the registration of all clubs on the south side of Pall Mall for similar purposes in case of the mobilization of the territorial force. Supplies from neighboring hotels would result in providing suitable hospital accommodation in time of war.

The Florence Nightingale Hospital. H. H. Brit. Jour. Nursing, London, 1913, LI, November 22.

Her Royal Highness Duchess of Albany opened the extension of the Florence Nightingale Hospital for Gentlewomen at 19 Lisson Grove, N. W., November 14. The occasion was most impressive, and was attended with a suitable program of music and an address of the president. The objects of the hospital are to provide gratuitous surgical service to gentlewomen who are unable to bear the expense of ordinary nursing homes. The institution is open to all denominations and all nationalities.

Hospitalization of Typhoid Patients (Della spedalizzazione V. Luigioni. Ospedale Maggiore, Milano, dei tifosi).

In many Italian hospitals the typhoid patients are not sufficiently isolated. In some places they are even placed in the same rooms with other patients. The author demands a strict isolation of such patients. There should be two wards in each hospital for such patients, one for men and one for women, but both should be placed in the same pavilion or in the same division of the building. Small special isolation rooms should be provided to receive delirious patients or patients affected with other infectious diseases. A typhoid ward should also have a special cabinet for chemical, microscopical, and bacteriological researches.

Mission Hospitals of the Empire. Hospital, London, 1913, LV. November 29.

Medical missionaries have been the pioneers in every civilized country in which hospitals have been established. With 800 medical missionaries in China, with few exceptons-such as the treaty ports and places where military surgeons or legation physicians practice-all scientific, medical and surgical work in China is in the control of missionaries. The desire of the Chinese to avail themselves of the advantages of western medical science in the education of the rising generation has been an important factor in the changed attitude of the Chinese government toward Christianity and missions in general.

The Infants' Ward of the New Vienna Children's Clinic (Die Säuglingsstation der neuen Wiener Kinderklinik). Mayerhofer. Ztschr. f. Kinderheilkunde, Berlin, 1913, VIII, Orig., No. 5.

The station is in the third story of the main building of the children's clinic. The room extends along the southern front and the windows open toward the south. Doors, corridor, and elevator are on the north side. The flat roof is arranged as an open-air station. There are in all four rooms to receive the babies, and rooms 1 and 2 can be used as isolation rooms. Six sisters are constantly employed as nurses, and there are two or three wet-nurses, the latter bringing also their own babies with

Resolutions of the German Hospital Physicians (Entschliessung der Krankenhausärzte). Pagenstecher. Ztschr. f. Krankenanstalten, Leipsic, 1913, IX, No. 43.

The German hospital physicians, at their meeting held in Berlin, adopted the following resolutions: (1) The principle that only patients without means may be treated gratis must also be observed by the hospital physicians; without means are to be considered those persons who have no means of their own and who have no claims to an accident, sickness, or other insurance. (2) Therefore all persons falling under the national insurance law are not to be considered without means. (3) The chief physician in charge of a hospital must therefore require payment from such patients. (4) Patients transferred to the hospital by mutual insurance associations are not to be treated without remuneration, especially as regards special treatments, operations, etc.

The Nurses' Missionary League—The Opportunity of Womanhood. Dr. Jane Walker. Brit. Jour. Nursing, London, 1913, LI, November 29.

In an interesting address the speaker claims men have been too busy in working out their own salvation to remember women, and no history worthy of the name would be complete without taking account of the "woman's movement." With present-day progress and enlightenment, the future is full of vast opportunity. The work of Florence Nightingale in the Crimea was not her greatest work. She had done splendid work in altering the system of military sanitation. The passing of the metropolitan poor act in 1867 was largely due to her. Dr. Walker gives excellent advice to nurses-recommending them to read if only fifteen minutes a day, and to follow the advice of Lord Holdane to the students of Edinburgh, "Take a wide outlook on life." Nursing in its highest aspects, she claims, is essentially a religious work-a vocation more than a profession; that the nurse's opportunities for good are boundless, and through it all she must bring humanity, comfort, and consolation. She must be a true daughter of consolation.

What Is a Mental Hospital? Hospital, London, 1913, LV, November 29.

Improvements in institutional treatment of patients suffering from mental diseases make the term a generic one as applied to all institutions in which the insane or mentally deficient are confined. In a technical sense, the more precise meaning is worth noting. Under the lunacy acts three kinds of institutions are recognized-county and borough mental hospitals (asylums of old), registered hospitals, and licensed houses. The county and borough institutions are rate supported and intended for the poor-law class of patients, while the registered hospitals and licensed houses exist for paying patients, and have no rate aid and sometimes no endowments. Today the mental hospital is becoming the property of the new institutions for unimprovables, and the ward colony is used increasingly for those where the ability of the majority is rendered capable of work.

The Construction of Hospitals—A Belgian View. Chapter 6—The Drug Store (Die bauliche Anlage der Krankenhäuser—Ein belgisches Gutachten. 6. Kapitel—Apetheke). J. Stastny. Ztschr. f. Krankenanstalten, Leipsic, 1913, IX, No. 45.

In the hospitals of Brussels the drug store is burdened with dispensing wines, beers, and even eggs. The physicians protest against such a custom and demand a reform. The drug store should dispense only for the hospital and should have no outside customers. In Brussels the hospital drug store consists of a pavilion of two stories and a basement, the latter serving as a storage room. The drug store proper is in the first story, which contains also an office, a library, a laboratory for chemical and microscopical analyses, a distillation room, and a laboratory for the assistant. The second story contains a dining room, three bed rooms for the employees and one for the servant. Such a drug store is sufficient for a hospital of 800 to 1,000 beds.

The Municipal Sanatorium for Nervous Diseases of the City of Frankfort-on-the-Main (Die städtische Nervenheilanstalt der Stadt Frankfurt a. M.). Bresler. Psychiat.-Neurol. Wchnschr., Halle a. S., 1913, XV, No. 31.

The sanatorium is situated in the Taunus Mountains, and is built on the southern slope of a high ridge, surrounded by dense woods. It consists of two large villasone for men and one for women. The basement, which is large and receives an abundance of light from the south side, contains rooms for therapeutical purposes. In the first story there are two large parlors and three dormitories for 18 patients. There are also large, wide balconies on the south and east sides. The second story contains a spacious concert hall, six rooms for patients, and a large parlor. This story also has large balconies. The total cost is \$255,500 (1,022,000 marks). The furnishings cost \$30,750 (123,000 marks), and \$31,750 (127,800 marks) were spent for machinery. The institution has its own electric plant, water supply, and a sewage system, with a purification plant.

Prevention of Insanity by the Treatment of Incipient Cases in General Hospitals. Vernon L. Briggs. Med. Review, St. Louis, 1913, LXII, November.

The author takes up the early history of insanity as mentioned in the laws of Moses, and to be found also in Hebrew scriptures as "madness." He cites the expense of care of the patient, deals with statistics and the bibliography of his subject, and concludes with the following summary: Psychiatric wards in general hospitals would be

the means of preventing insanity in a very large portion of cases. First, the incipient case would have the advantage of immediate expert care, composed of every branch of medicine and surgery. He would have the advantage of a large hospital nursing staff in place of a few attendants. Suicide and attempts at suicide would be prevented. The social consideration of patients after recovery would save 50 percent from being placed in insane institutions. The opportunity for clinical instruction to physicians and medical students would result in the whole profession earlier recognizing incipient cases, and would be an enormous gain to our profession and a greater gain to the public.

A Method of Registering Hospital Cases. T. T. O'Farrell, Tr. Roy. Acad. Med. Ireland, Dublin, 1913, XXXI.

The writer claims for a good method of registration the following characters: a good method of case taking; a uniform classification of disease; a regular and systematic notification of results; a simple method for recording and storing these results; a registration file of operations (date index); colored cards-red for males and blue for females (name index); case sheets-males and females (registration number index). The files should be kept in the form of drawers, and worked according to the card indexing system, as shown in an accompanying illustration. At the end of the hospital year results of cases are to be entered in the analysis book, with the following record: number in column nomenclature; diseases; cases according to registration number; cured; relieved; unimproved; died. Personal element enters strongly as to the detail of cases. The registrar can without difficulty obtain the necessary details through those directly concerned with the treatment of the case.

The New General Hospital at Barmbeck (Das neue Allgemeine Krankenhaus Barmbeck). K. J. München. med. Wchnschr., 1913, LX, No. 45.

This new municipal hospital of the city of Hamburg was opened November 2. The hospital grounds cover an area of 34,000 square meters. The construction lasted three years and cost 14,500,000 marks (\$3,625,000). The institution has room for about 2,000 patients. The hospital presents some important special features. The division for infectious diseases is completely isolated, and the reception of such patients is strictly separated from that of other patients. This division contains a so-called exchange pavilion, with a pure and an infectious side. The physicians and attendants of each side are kept strictly separate. There is also a special division for doubtful cases of mental disease, which is intended to receive such psychoneurotics whose transfer to an insane hospital does not appear to be urgent. Special attention was given to the division of physiotherapy, which has its own chief physician. The bath house is arranged for carbon dioxid, sulphur, vapor, Turkish, and hot-air baths, with douches of all kinds. A large hall contains a complete apparatus for Zander gymnastics.

With the Red Cross in Greece, 1913. W. W. Wagstaff and J. R. A. Todhunter. St. Thomas Hospital Gaz., London, 1913, XXIII, November.

Having been intrusted by the British Red Cross with a large amount of stores sent to the assistance of the Greeks in their war against Bulgaria, the authors furnish an interesting account of the incidents of the journey and condition of affairs met with. At Durazzo, a western Albanian town of marked oriental character, was to be seen a western and highly civilized chemist shop. At Salonica they were appointed to the Third Military Hospital. In

being given access to crowded annexes of the hospital, the number of cases treated in six weeks totaled 436-295 surgical and 141 medical cases-excluding a large number of casual out-patients. The Greek soldiers were entirely unaccustomed to hospital work. Valuable assistance, however, was given later by an English nurse familiar with the Greek language. The Greek medical service treated an enormous number of wounded most satisfactorily. At one time there were 12,000 wounded in Salonica, for which all the schools in Salonica were converted into hospitals, under the control of the Greek Red Cross, thirteen such improvised hospitals being under its charge. The manner in which the necessary equipment was supplied was wonderful, the Greeks having learned the lesson from the first war, and had well assimilated the teaching of their French instructors.

A Little Journey to the Hospital of St. Bernard. Critic and Guide, New York, 1913, XVI, December.

In an interesting account of forty-nine days in Europe the editor tells of his visit, and furnishes illustrations of the hospital founded by St. Bernard de Menthon in 962. With a winter of nearly nine months and the heavy snow, starving peasants and workingmen who come up from Italy in search of work are lost and buried in the deep snow. In their work of saving the lost wayfarer the monks are assisted by the St. Bernard dogs, that possess a wonderful sense of smell. Without these the monks could do but little. The hospital contains twelve monks and seven attendants. The former go there when quite young, but several years of the severe, gloomy climate-the hospital being one of the highest winter habitations, with an altitude of over 8,100 feet-their health is undermined and they are sent to some milder climate, Martigny or Italy. Other self-sacrificing youths take their places. Strangers remain but twenty-four hours and without charge. The traveler who can afford it, however, drops some contribution in the box before leaving. The writer comments on how often a man will pay 50 or 100 francs a day at a hotel when he must, but who will not leave 10 francs to the poor, self-sacrificing monks who have such meager sources of revenue. The hospital has a good library, chiefly, however, of theological works, an interesting collection of coins, etc. One monk acts as postmaster, another as telegrapher. They all have some secular work, and are not idle. As a sign of progress, the writer notes the use of electricity in the dining room-eight years ago a kerosene lamp furnished light-showing that even an abbey founded in 962 cannot wholly escape modern influ-

The Copenhagen Hospitals (Les hopitaux de Copenhague). P. J. Ménard. Paris Médical, 1913, XII, No. 47, Suppl. The author paid a visit to the Danish hospital, and finds that Denmark takes a foremost place among the modern nations in the progress of hospital science. The Danish hospitals are among the most beautiful in the world. There are two classes of hospitals—national and municipal. The Rigs Hospital, or national hospital, at Copenhagen is under direct government control, and receives patients from the whole kingdom. It is complete in all its departments, and forms the center of medical education in Denmark. There is no rivalry between faculty and hospital, and there is no separation of theoretical and practical instruction. There are six municipal hospitals in Copenhagen. A general director is in charge of the administration of all city hospitals, and each hospital is managed by an inspector. Most of these hospitals are of modern construction. Kommon Hospital, though built fifty years ago, is worth a visit. It is the type of a hospital complete in all its medical branches, except infectious diseases. There are six large pavilions-two surgical and two medical pavilions, one for skin diseases, and one for nervous and mental diseases. A children's ward is attached to each service. Bornes Hospital, or children's hospital, is of quite recent construction. It presents a beautiful and pleasant sight. Everything is clean and orderly. There are flowers and shrubs in profusion-in the halls, in the sick rooms, in the corridors, and on the balconies. All rooms are large and airy, with doors and windows wide open. Large verandas form open-air stations, and are occupied by the children also during the winter season. Rigs Hospital is the most beautiful hospital of Copenhagen, built on thoroughly modern lines. It contains 974 beds, has five medical and five surgical pavilions, and cost \$2,-150,000 (10,700,000 francs).

The German People's Sanatoriums for Nervous Diseases in 1913 (Die deutschen Volksnervenheilstätten im Jahre 1913). Bresler. Psychiat.-Neurol. Wchnschr., Halle a. S., 1913-14, XV, Nos. 30, 31.

Schönow House, near Berlin, was founded by an association of prominent benevolent men and opened in 1899. The institution consists of a large administration building, two pavilions for men and one for women, and other smaller buildings. Another sanatorium for nervous diseases for people with limited means is Rasemühle, near Göttingen, which owes its existence to the generous efforts of the late Dr. Cramer, professor of psychiatry in Göttingen. It was his purpose to establish an institution for those nervous patients who have small means and who, without treatment, would fall into permanent mental derangement and be lost to their family as breadwinners and become a burden to the state. The sanatorium has room for 100 patients. Another institution of this kind is Roderbirken, near Leichlingen, in Rhenish Prussia. It stands on a hill, and is surrounded on three sides by dense woodland. There are two large buildings-one for men and one for women. Cases of pronounced psychical derangement are not received. Only nervous exhaustion in the widest sense, the acute acquired neurasthenia, is treated at this sanitarium. The city of Essen owes its handsome sanatorium for nervous diseases to the generosity of one of its citizens, Mr. Lührmann. It is the first municipal sanatorium established for nervous diseases. The building stands on high ground, surrounded by woods, and consists of two wings-one for men and one for women. Another institution of this kind has lately been established by the city of Frankforton-the-Main, which is described in another paragraph. The sanatorium of the Mutual Insurance Association of Leipsic belongs also in this class. It is built in the villa style and has room for 50 patients. Most of the patients are neurasthenics. The curative means are air, sun, mineral, pine needle and carbon dioxid baths. Some of the patients are employed in light gardening work.

Gift for Johns Hopkins.

The John D. Rockefeller General Educational Board recently announced that it had appropriated \$1,400,000 for the Johns Hopkins Medical School. Professors and their staff in the departments of medical surgery and pediatrics will be able to withdraw altogether from paid practice, and devote their time to care of patients, teaching, and research work. The fund is to be known as the

William H. Welch fund, in honor of the president of the university. In making the gift the General Educational Board places no restriction on the physicians. They are free to do any service that science or humanity demands, and to treat any one, but will accept no personal fee.

Leicester Royal Infirmary.

Mr. Thomas Sharland, of Leicester, on reaching his four score years, sent a donation of £100 to the Royal Infirmary. The donation was the result of nine years' saving. His desire to thus celebrate his eightieth birthday was stimulated by a similar gift from the late Dr. Nuttall in 1905.

Army Nurse Corps.

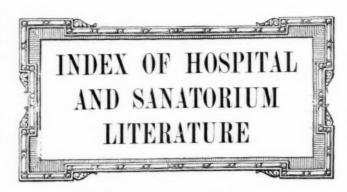
The annual report of the surgeon-general of the army for the fiscal year ending June 30, 1913, furnishes interesting information of the Army Nurse Corps. With an authorized strength of 125, an increase of 25 nurses became effective July 1, 1913. Such a provision will enable the surgeon-general to supply additional nurses at stations now inadequately provided for. During the fiscal year 36 new appointments and eight reappointments have been made, and 39 nurses have been discharged. There have been 549 applications from graduated nurses for admission. Since his last report the surgeon-general announces the enlargement and completion of nurses' quarters at the Walter Reed General Hospital, Takoma Park, D. C.; the Letterman General Hospital, San Francisco, Cal.; and the Army and Navy General Hospital, Hot Springs, Ark. The American Red Cross Nursing Service, approaching 4,000 members, constitutes the reserve of the Army Nurse Corps, and in time of war or emergency, with their own consent, they are eligible for active duty.

New "Restraint" Laws in England.

New regulations for the restraint of mental patients have just been issued by the British commissioners in lunacy to take the place of those that have been in force since 1895. The new rules are more stringent than the old as to the conduct of institution employees and physicians, but allow physical restraint in a wider range of cases. These are a few of the provisions:

"A straight jacket may be used different from that described if it has been approved under the seal of the commissioners and a sample bearing the seal is kept at the institution for inspection. Also, if, in the opinion of the medical man in charge of the lunatic, some mechanical means of bodily restraint other than those permitted are necessary in a particular case where the circumstances are exceptional, such means may be used with the previous sanction of the commissioners for such periods as they may authorize. Gloves are to be considered as mechanical means of restraint only if so fastened that they cannot be removed by the wearers. If the continuous bath is employed, the use of a cover to it will no longer be deemed to be restraint if the aperture in it for the patient's head is large enough for his body to pass through. Trays or rails fastened to the front of chairs used by idiot children, cripples, or aged infirm adults to prevent their falling out are not to be considered restraint, provided that in the case of adults it is within the patient's power to undo the fastening."

Fifty-six "freemen" of Boston in 1810 signed a "round robin" asking for the establishment of a hospital for the sick poor of that city. Jackson and Warren, whose names come down to us in connection with the discovery of ether as an anesthetic, worked out the plans, and the Massachusetts General Hospital, opened in 1821, was the result.



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What Is "Research" Medicine?

"Among the many criticism of the report of the royal commission on London University," says The Hospital (London), "none is more interesting to the hospital world than that which Dr. Charles Mercier has embodied in aletter to the educational supplement of the Times. He insists on a proper understanding of the meaning of research in relation to medical education. After pointing out that according to the commissioners 'the medical undergraduate of the university should be brought up in an atmosphere of research,' he declines to have this word limited to 'some recondite method of finding out what is unknown,' and argues very pertinently that the whole time which the student spends in the wards is spent in research into the particular things which he will be called upon to investigate in after life. To research, Dr. Mercier emphasizes, means no more than to search diligently, and he argues that the best way in which to teach students to do this is as much the province of clinical instruction as of specialized laboratory work. There is an undoubted danger, just now, of this side of the question being forgotten, and Dr. Mercier is to be congratulated for bringing the straying attention of the disputants sharply to the halt."



LETTER FROM SPAIN.

A Little Journey in Spain—The Early History and Present Management of Hospitals—The Intern System—The Effect of Bull Fights on Hospitals.

Madrid, December 6, 1913.

There is only one thing I am sorry about regarding my Spanish travels, and that is that I didn't discover Spain sooner. To land at Gibraltar, run over to Tangier perchance, and then come back and saunter through the warmth of temperament as well as temperature of Andalusia; to see the Moorish palaces; to wander in the gardens of the Alhambra on a moonlight evening; to yell yourself hoarse at a bull fight in Seville; to see the greatest art collection in the world in the Madrid Prado; to ride across the ancient stone bridge into the old town of Toledo; to get the spirit of a new kind of life that makes you feel a thousand years young-is worth while. And this holds true for the medical man even if there isn't anything in the medical line wonderful to see, for, even if there were, one would wait till that wonderful "tomorrow" of the Spaniard to see it.

The expression, "Let George do it," is not a joke in Spain. It is the motto of the country. And so, as far as hospitals go, I'm going to "let George do it," and merely tell you some of the gossip I heard while on my travels, for I give you my word that, with a single exception, I didn't set foot inside a medical institution while I was in Spain.

Although we are inclined to overlook Spain today, one should remember that from the fourth to the fourteenth century it was the Arab and the Jew that kept the "lamp of secular learning lit" when "superstition came near beggaring the intellect of Europe." And it was Moorish Spain that was the "center of light and culture at this time"-Averroes, Albucasis, and Gerbes were valued for knowledge. As early as the tenth century Christians crossed the Pyrenees to study in Spain. The Moors had female physicians and a licensing board—they considered dietetics and they washed. (That is why the Spaniards didn't; to this day dirty brown is spoken of as Isabella color.) Smallpox was first discovered by Rhazes, a Moorish physician of Cordova. The Moors described erysipelas as an epidemic disease, they removed tumors, and bone plating was done by them. Even in the middle ages Spain had a psychopathic hospital. In the sixteenth century Spanish physicians and surgeons were active in advancing their profession. We can find important literature on such subjects as operation for calculus and trepanation. The treatment of wounds was intelligently discussed by Ageuro, a professor at Seville (1531-1599). The treatment of urethral stricture by bougies was written on by Andreas a Laguana (sometimes called the Spanish Galen). Although born in Brussels, the greatest medical mind in Spain during this period was Vesalius, who accompanied Charles V. into Spain and became court physician to Phillip II. The jealousies of the court, the antagonism of the clergy, and the lack of anatomical material finally drove him out of the country.

The University of Madrid is called the Central University to distinguish it from the provincial schools. The faculty of Madrid dates from 1850. The university has a large library, including many rare books. The medical department of the Central University is called the San Carlos College of Medicine. The school was founded in 1780 by Charles III. The course of study extends over seven years. The school has a large, well-lighted dissecting room and a good anatomic museum. There is also a good pathologic museum, well arranged and extensive, but not up to the modern colored collections one usually sees nowadays. There are animals and instruments in the physiology department. The bacteriological laboratory seems up to date. There are about 400 medical students in this school.

There are seven other medical colleges in Spain, but power to grant diplomas is limited to San Carlos. Thus a man from any other school must spend one year at least in San Carlos before being allowed to come up for his degree. Graduates of the other schools are allowed to practice, but are not allowed to make use of the title M. D. There are about 2,000 medical students in Spain, and, according to the ideas of the medical men one meets, that is about 2,000 too many.

Practice in Spain is difficult as far as earning a living is concerned. The profession is overcrowded. Many go into the army and navy, but here the maximum pay is about \$60 a month. The average fee in Madrid is from \$1 to \$2 for a call. The man who makes \$1,000 a year is considered a successful practitioner. It is said that there are one or two great specialists in Madrid who make as much as \$20,000 a year.

Spain is filled with charitable institutions, especially of religious orders, the Sisters of Charity and St. Vincent de Paul being particularly well represented.

The latest detailed information I was able to obtain regarding the hospitals of Spain was some ten years old, but in this country a mere matter of ten or twenty years is of little importance, and therefore such figures as I shall use will serve for all practical purposes.

Since 1812 the Beneficencia Publica of Spain has been in charge of bodies corresponding to our hospital, health, and charity boards, known as ayuntamientos or juntas. Such boards are appointed by the municipality, save in the case of private institutions. These boards have to do with public health as well as hospitals, and in 1879 the Government decreed that municipal juntas should be established in all towns with over 1,000 population; and that the important provincial juntas should include the civil governor of the place, a justice of the peace, the captain of the port, an architect or civil engineer, two professors in the faculty of medicine, two in pharmacy, one in surgery, and in addition a veterinary surgeon and three gentlemen "who shall represent property, commerce, and industry." With such a board, is it any wonder that Spanish institutions have not made progress? When we mix even a lay and a professional board at home, all action ceases, so what could be expected in Spain? And, besides, how could this board keep up with modern progress unless the Government had made some provision to add a chauffeur, a wireless telegraph expert, and an aviator.

Besides the aforesaid list, for Madrid there must be six

additional members—two skilled in medical science and one an architect or civil engineer. One can understand now why, when he turns to Madrid in his Baedecker's Spain, he sees the statement, "None of the Madrid hospitals are good," which may be bad English, but is good advice to the invalid tourist.

And this is not all. In 1885 it was further decreed that there should be a council of health, which, with the minister, should be supreme in this department, and in this council there must be the minister himself as president, the director general of health, the director general for the army and navy, the chief of the national fleet, two diplomatic agents, two consular agents, five experts of the faculty of medicine, and an expert veterinary, engineer, and architect. These men are nominated by the king. The secretary of the board receives a salary of \$1,200 a year, and the others are well paid.

The report of this central board, which I saw, included at that time some 1,500 public charitable institutions, of which some less than 1,000 were hospitals; the rest were infirmaries, insane asylums, foundling homes, lying-in establishments, and what not. These hospitals are classed as general, provincial (state), municipal, or private, according to the source of their income.

The first attempt at hospital organization in Madrid was by Phillip II. in 1566. The consent of Pope Pius V. was obtained the following year so that old Moorish hospitals could be included. It was not till 1587, however, that all the hospitals of Madrid, with the exception of the Passion, were united into a single general hospital situated in the Calle del Prado. This hospital was supported at first by charitable persons, but in 1636 Phillip III. gave it a certain sum, and later certain taxes were levied for it. The institution was removed to the Calle de Atocha in 1748, and near by are the medical schools of San Carlos, established by Charles II. in 1783.

This Madrid general hospital can care for about 1,800 patients if required, although there are only 1,650 regular beds. It is a great quadrangular building, four to five stories in height. There are forty-four wards, varying in size from 100 beds to 10 beds. The services include medical, surgical, obstetric, ophthalmic, insane, and detention, There is special accommodation for people of rank and paying patients. There is a small operating room for each surgical division.

The nursing is done by men for the males and by hospital sisters for the women. The diet list is generous, although possibly better adapted to the Spanish than the American palate. Garlic soup for breakfast, for instance, might be objected to by an ignorant foreigner. A pint of wine is included in the daily fare. The general aspect of the hospital is dreary; there is not enough light or air. There are no stoves, and I am told that the cold may be severely felt in winter. As it was 110° in the shade the day I visited the hospital, I did not miss the stoves. The uncleanliness that is so noticeable seems unnecessary, and can be accounted for only by that peculiar Spanish characteristic attitude that makes one think that the expression, "We should worry," must have originated in this country. Apparently there are no rules of any sort in this great hospital. There is no such thing as regular attendance. There are no records, save memorandum books. Visitors smoke, flirt, and conduct themselves in general just as they might at the "movies."

The staff of the hospital is made up of clinical professors from the medical faculty and an equal number of resident physicians, who take turns being on duty. There are also resident interns, who are men that have passed

their preliminary laboratory medical courses and are taking this means for acquiring their degree in medicine. These men are chosen by competitive examination. One of these competitive examinations for places under the Beneficencia Municipal was held while I was in Seville, and one of the daily papers was unkind enough to take exception to the fact that certain men were given appointments notwithstanding the fact that they were unable to answer a single question in topographical anatomy correctly, and could not define such terms as "amputation," "hemorrhage," "ligature," and "disarticulation."

It is difficult to find out much that is definite regarding the finances of these Spanish hospitals. I can imagine that the milkman and the grocer and the butcher have the same difficulty, for there is only one fixed rule regarding their finance, and that is that the expenditure shall always exceed the income. One report that I saw of the Madrid hospitals showed an outlay more than double the income, and, as if that were not enough, there was added to it a similar deficit for the previous year. As a matter of fact, everything works out all right eventually, for, when the deficit gets so big that the milkman and the butcher threaten to cut off their supply, state and the municipality get busy and vote a few thousand extra pesetas and stick up the price of seats at the bull fight a couple of cents higher so as to raise the money. Moreover, the hospital has the revenue from the sale of clothing belonging to the deceased, and I should imagine this might be made to help in an emergency.

In addition to the Madrid general hospital, there are many other institutions in the city, for Spain does not lack in quantity, whatever its other deficiencies may be. Dr. Nicholas Senn is one of the few Americans who, as far as I can find, ever learned anything about Spanish hospitals. He has published an article on the Medical Institutions of Madrid (American Medicine, vol. VI, 1903). He found a commendable spirit of progress in the medical profession in Spain. He says "progress and investigation is rife everywhere, and makes itself manifest in all of its medical institutions and medical literature." I have taken the liberty to quote extensively from Dr. Senn's article regarding some of the Madrid hospitals, although I can not take quite his rosy view regarding medical progress in this country.

Hospital Militar de Madrid en Carabanchel Bajo, the military hospital, was erected in 1895, and consists of twenty-four pavilions, solid brick, either one or two stories in height. The buildings are connected by glasswalled galleries. There are very fine quarters for the medical officers in separate pavilions near the entrance. A general is in command, but in Spain there are many generals. There is a separate pavilion for operating, including the usual preparative anesthesia, sterilizing, and instrument rooms. The buildings are electrically lighted and steam heated. In this hospital the wards are kept clean. There is a well-equipped laboratory for pathology and bacteriology, and a good museum. There are isolation pavilions for infectious and for mental diseases. The hospital is intended for 400 patients, but many more can be cared for if necessary. There are well-arranged store rooms, laundry, stables, etc. The sick are cared for by men detailed from the sanitary department and by sisters of charity.

The clinical hospital is an old building adjacent to the medical school, with a capacity of 240 beds, divided into wards of from 10 to 24 beds. Teaching is done in this hospital in a modern way, two or three students being assigned to a case. They take a complete history, make a

physical examination, and follow the case through by regular visits.

Princess Hospital is in the heart of the city. It was founded by Queen Isabella II. for 225 patients. It consists of three-story brick pavilions, with inside glass-protected corridors and a beautiful "patio," with flower beds, trees, wandering paths, and fountains. Sisters of charity care for patients. This hospital has also orderlies, who have had two years' training at San Carlos. This hospital has a large out-patient department, which includes clinics for genitourinary diseases, nervous diseases, eye, ear, nose, and throat, gynecology, and children's diseases.

Rubio Institute is an institution devoted wholly to surgery. It was erected in memory of Frederico Rubio y Gali, Spain's most famous surgeon, and opened in 1896. Rubio served here until his death in 1902, and is buried in the hospital grounds. The school is used as a post-graduate institution for the study of surgery. Instruction is given for two years for 250 pesetas. The hospital is beautifully situated, and has extensive well-parked grounds. There are two wards of 24 beds each, connected by corridors with the operating rooms. The equipment is modern; it is lighted by electricity and has steam heat and sanitary plumbing. This institution is really in a class with some of our better private hospitals, and is the only place in Madrid which offers training for nurses. Nurses receive a three years' course, given by members of the staff, and receive a certificate on passing a satisfactory examination at the end of the course.

There are many other small hospitals, seventeen in all (in 1903). These include the children's hospital of 200 beds, a hospital for the insane, with a seaside branch at Villajoyosa, where inmates are sent for the summer. Insane patients are supplied with music, dancing, and theatrical performances.

The hospitals of Spain do not have interns in our sense of the term. Instead, young doctors are appointed by competitive examinations, and hold the places until they are able to make a living by outside practice. The men alternate, serving twenty-four hours at a time. For instance, in the Princess Hospital there are three "interns," and therefore each man has to give every third day to his service. They receive a small salary, and try to acquire a practice in their off time.

I find in my note book the following rough notes on other Spanish hospitals:

Seville.—The Central Hospital, which is a municipal institution, is said to be no better nor worse than the average. The Hospital del Sangre is a private hospital, which can accommodate 300 patients. This is one of those institutions which reverses that expression of Shakespeare, "a goodly apple rotten in the core," for this has a very goodly inside, although it is not attractive on the outside. It is a large quadrilateral building, which incloses a splendid garden, in which there are orange trees and flowers. A chapel is located among the orange trees, and mass is said here daily.

Granada.—Despite the beauties of the Alhambra, this town contains about as much poverty as one sees anywhere in Spain, and it is not surprising therefore that we find here a hospital of 500 beds. This is called the Hospital of San Juan de Dios. The attractive thing about it is that the expenses of this institution are always 25 percent greater than the income.

Bilbao.—This city has a fairly modern hospital of 241 beds, which cost about \$100,000. This hospital has a revenue of \$75,000 and spends \$100,000. (I refuse to be personally responsible for any of these figures. I am

simply repeating what anyone might tell an ignorant tourist.)

Santander.—This city is famous for staging the greatest bull fights in Spain. Every summer there is a bull fight given here which begins in the morning and keeps up all day. It is a regular "world's series" bull fight. All of the 200 beds in this hospital are sure to be occupied following this big bull fight. This hospital spends exactly double its income, according to report.

Valencia.—As near as I could figure it out, there is a Central Hospital here, to which the inhabitants of some 300 surrounding towns are privileged to send patients, and I presume there is some mechanism by which they pay for this privilege. The General Hospital was founded by P. Jofrè. It consists of a number of large irregular buildings, and can accommodate more than 1,000 patients. The doors are so large you can drive right in with your touring car, providing you have one. Valencia is also noted for having established in the middle ages what was probably the first hospital for the rational treatment of the insane. This institution, the Hospital dels Folls, was founded in 1409 by Bernardo Andreu.

Valladolid.—Has a general hospital of 300 beds, in which the patients are cared for by the sisters of charity, and the physicians on the staff are paid a salary.

Barcelona, which is said to be as up-to-date in hospitals and in its medicine as any European city, I am reserving for a future communication, for, as I indicated in the beginning, some day I am going back to Spain.

R. L. THOMPSON, M. D., Professor of Pathology, St. Louis University School of Medicine.

LETTER FROM VIENNA.

European and American Methods of Building Hospitals Contrasted—The Kaiser's Jubilee Hospital in Vienna Taken as a Practical Example.

Vienna, December 5, 1913.

As showing the difference between the way we conduct the preliminaries for the building of a hospital and the way they approach the problem in Europe, let us take the new Kaiser's Jubilee Hospital of 1,000 beds in Vienna.

There were some preliminaries of a legal nature. Vienna had never built or owned a hospital, though under the laws the city was obliged to take care of its sick. So the courts had to pass on the question, and did so, finding that there was no compulsion on the part of the city to build. But just about that time came along the fiftieth anniversary of Emperor Francis Joseph's ascendency of the throne. It was decided to give his majesty a great festival. While plans were being talked over, the old gentleman himself settled the matter by deciding that he would have no fuss made over him, and that, if it were the pleasure of his people to celebrate his anniversary, he would take it as the highest compliment if they would build a great hospital.

Then began the philosophic and scientific European way of doing these things. The plans were given to the city architect Scheiringer to prepare. The heating was given to Baurat Wejmola, a man of national repute in that work; the lighting, ventilation, and other engineering problems were given into the capable hands of engineers Ast and Möhner, men also of national repute. The internal arrangements were assigned to Leo Ehmann, a specialist in hospital building, and specialists in the various branches of medicine were next appointed, so that they could help develop the plans, each in his own department.

There were the chief magistrate, Dr. Dont; Dr. Moritz, chief of staff; and Linsmayer, Popovac, Keitler, Kren, Topolanski, Reitter, Maresch, docents; and Doctors Kapsamer, Zaffron, Mayer, Kowarshik, and Schoenfeld, every man of them specialists in their several branches.

Then these men got together, divided the work up among themselves, and went at it. The function of the architect was to compose the various parts into a harmonious whole. After each man had told the architect just what he wanted, and after the architect had drawn up these several department plans, the committee of the whole got together again, presided over by the mayor, Dr. Karl Lueger, and together they arranged the differences, cut here and there, and eventually decided on just what each department should have.

Then the engineers got to work. Hospital Engineer Ehmann made the layout, to give the best service to each department and to place the several departments in proper relation to each other; to give proper location to the power plant, kitchens, laboratories, and baths.

Then other meetings of the whole committee were held. At these meetings the completed plans were on the tables, specifications were shown, and prices of everything were given. Amendments were made here and there; the specifications were changed concerning materials, and the internal arrangements were shifted. Then the architect took back his plans and perfected them in accordance with the changes ordered, after which they were again submitted.

When the final approvals were placed on the plans, the contracts were let and the building operations were begun. After that no changes were permitted. There were no "extras" on the job, and the head of a department who did not like what he was getting could "kick" to his heart's content—it did him no good. But every man who had anything to say about the planning of the hospital was a specialist, whose judgment had been proved in previous hospital service.

In the United States an architect is hired the first thing-generally somebody's brother-in-law. He may have built a hospital before, but that fact is a happy coincidence and not a prerequisite. He looks over the ground, draws his plans, submits them to a board of directors, not one of whose members knows a single fact about architecture or hospitals, and generally could not read a blue print to save his life. If a member of the medical staff is consulted, it is because he is a friend of some member of the board and not because he knows anything about a hospital. Then the plans are approved by the board. The specifications are drawn by draftsmen in the architect's office, generally young men or boys, who are dependent for their knowledge, as they proceed, on books or on a fugitive article here and there, but who have no first-hand knowledge of the work they are doing.

It naturally follows that when the structure begins to take form and the medical men of the institution have an opportunity to see for themselves what they are to get, the protest begins. Generally the demands of the doctors are so reasonable, and their complaints so indisputable, that the changes are ordered—that is where the "extras" begin. But sometimes the changes are called for so late that the cost of making them would be prohibitive, and the building goes on and eventuates in a monstrosity.

When we compare the workmanlike efficiency over here, and the smooth, architectural, and utilitarian product, with what we are getting at home, we members of the medical profession may be pardoned for asking, "How long, O

Lord, how long," are we going to be cursed with uninformed, ignorant, and egotistic boards that arrogate to themselves functions to which they have been fitted neither by experience nor training?

LETTERS TO THE EDITOR.

The Sea View Hospital Estimates.

New York, December 11, 1913.

To the Editor of THE MODERN HOSPITAL:

I notice the following, under "Editorial Comment," in your September issue:

"The new Sea View Municipal Hospital of New York seems to be in a bad way. It was planned to cost \$2,000,000, and already \$3,627,000 has been expended. The Bureau of Municipal Research is asking why. But, like in most municipalities, the people of New York have become accustomed to bad guesses on institution costs."

The original estimate from which is derived the \$2,000,000 legend was based on sketch drawings and the work let in a single contract. No survey even of the property had been made. It was estimated by a city department. I recognized the impossibility of deriving a reliable estimate from the information then obtainable and declined to prepare one. However, I am frank to say, that had not the cubical contents, as a result of increases in sizes of the buildings, additional buildings and the natural grades been substantially doubled in the necessary development of the problem, the hospital could have been built at about the estimate given.

The finished cost of the hospital will be less than \$4,000 per bed, and I know of no similarly complete hospital erected under equivalent labor and building regulations to those of New York City that will have cost so little.

Reports of "investigating bureaus" should always be taken with a mental reservation, as these bureaus are quite as human in their managements as the works criticised. Unfortunately the entire truth is not always stated.

As architect of Sea View Hospital, I would kindly request the publication of this correction.

R. F. ALMIBALL.

Seeing the Bogey Man.

The meetings of the International Anti-Vivisection Congress in Washington recently were characterized by the usual hysteric denunciations of medical investigation. The Rockefeller Institute was particularly stigmatized as a wholesale torture house, and it was said that at hospitals human vivisection and the inoculation of patients with loathsome diseases is extensively practiced.

Dental Hygiene in Boston.

Boston is going at its problem of dental hygiene in the school in a most thorough and systematic way. At least they are "getting a line" on their work, as the following figures show:

In April, 1912, 75,000 circulars were sent to parents regarding the importance of this subject, and 50,000 replies were received. In the school year of 1912-1913, 26,439 Boston public school children received dental treatment—16,501 by private dentists, 9,938 at school dental clinics. School nurses distributed 7,700 tooth brushes, and gave 14,869 school room talks and 10,106 talks in the home on dental hygiene.

Our word orphan comes from the Greek. In ancient Greece an orphan asylum was called "orphanotrophium." The hospital for the care of the sick was called 'noscomium."



PROBLEM OF "DOCTORS' CALLS" SOLVED.

Head of Presbyterian Hospital Has Installed Loud-Speaking Telephone—"Still, Small Voice" Makes No Noise, But Is Heard Distinctly.

Mr. Asa Bacon, superintendent of the Presbyterian Hospital, Chicago, has solved the problem of doctors' calls in the hospital. He has installed a new system of loud-speaking telephones on each floor of his institution. There is a central switchboard in the downstairs main corridor,

then trials of various sorts have been made, but without a great deal of success. About two years ago a system was installed on the street cars of the Cottage Grove line in Chicago by which the conductor was enabled to call the streets from a transmitter conveniently arranged at his station on the rear of the car, but it seemed impossible to keep the adjustment of this instrument and it was finally taken out. A similar device was installed in the Great Northern Hotel to substitute for the page service for calling guests. That also was unsatisfactory and was removed.

Last summer on the lake front a system was installed as a part of the "show" during the Water Festival. There were many long waits between the water events, and at the transmission end of this system there were instrumental music, vocal singers, and monologists, and together these various features kept the crowd entertained and oftentimes in a roar of laughter, which made the waits seem less long.

At the White Sox Baseball Park for the past two years a similar system has been installed, with horns dropped from the ceiling of the great amphitheater at intervals of about 200 feet. With a small orchestra at the transmission end of the mechanism, a crowded amphitheater hold-

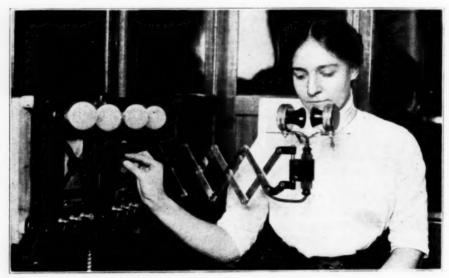


Fig. 1. Operator calling Mr. Bacon.

and a transmitter that looks like a small phonograph horn at the junction of the right-angle corridors of each floor. When a doctor or an intern, or the superintendent or the matron, or any person is wanted, the operator at the switchboard is notified, and she in turn presses a button and calls in a gentle voice, as, for instance, "Dr. Jones—telephone, please." This call is reproduced simultaneously in the eighteen transmitters in all parts of the hospital in which the system has been installed. The call can be heard at any part of any floor, in a voice that is low and gentle, but very distinct, and that would not disturb the most nervous or the sickest patient.

For a long time loud-speaking telephones have been tried out for various purposes. As far back as the World's Fair in Chicago the Bell Telephone Company served Strauss music from the Metropolitan Opera House, New York, to groups of people in the telephone company's exhibit amphitheater at the World's Fair grounds, Chicago.

This was extremely expensive at that time, and it was almost impossible to keep it in adjustment. Ever since ing 35,000 could be nicely entertained. The various announcements were also made from this system, but again the adjustment seemed to be not exactly what was wanted and it was not wholly satisfactory.

It seems that now Mr. Bacon has made some changes, and the adjustment seems to have acted perfectly for the several weeks in which the mechanism has been doing its work in a routine way. It has revolutionized the work at the Presbyterian Hospital, and everybody is delighted with it.

There is installed in addition to this call system the ordinary hospital lighting calls, and during the writer's visit to the Presbyterian Hospital a few days ago a definite trial of the efficiency of these two systems was made. It was determined to call with a light call a certain intern who was known to be in the house, and to call with the loud-speaking telephone another intern who was known to be working with the first one at the time. Within one minute after the telephone call was sent over the building the doctor wanted had gone to the nearest telephone and answered. Twenty minutes later, when the writer left the

building, the other intern's light was still flashing and had not been answered.

In many hospitals this problem of calling doctors and various people wanted has been a most perplexing one. If Mr. Bacon has solved it by a system that is efficient, noiseless, and prompt, as he seems to have done, he will be entitled to the thanks of the whole hospital world, including patients, visitors, doctors, and managers. The in-



Fig. 2. Mr. Bacon hears the call on floor D. Notice the transmitter above his head.

stallation is very simple, and any good electrician can install it, the expense being no greater than for a good electric flash system.

Fig. 1 shows the operator working the mechanism at the transmission end in the main corridor downstairs. Fig. 2 shows the horn fixed in the corner, near the ceiling, at a point where two corridors join each other, and so placed that the call ranges down each corridor.

Efficient trained nursing in this country dated from the landing of a group of English women who came over to teach their system in 1885. They came from Guy's Hospital, London.



An Electrical Obesity Treatment Apparatus.

Some years ago Bergonié made a number of experiments based on electrical stimulation with a view of bringing the majority of the muscles of the body into rhythmically regulated action and independently of the patient's will. By this method Bergonié secured efficient and prompt reduction of the fatty tissue. His method, however, was not altogether popular from the fact that an ordinary faradic current was used, and, on account of the somewhat irregular action of the current, considerable shock was produced, to the discomfort of the patient.

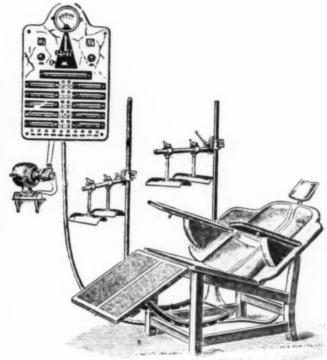


Fig. 1. Electrical obesity apparatus.

Nagelschmidt then experimented quite extensively with other forms of current. Instead of using a vibrator interrupter, he employed a rotating commutator or circuit breaker, through which a direct current was passed in quick alternation. The apparatus illustrated is so arranged that any number from ninety interruptions per second may be obtained with a current duration of 1/1200 of a second. It is claimed that the sensation experienced when using this current is very slight; that the character of the muscular contraction is mild enough to allow application to continue for hours, and then to quite an extensive range of interruptions the current may be so regulated as to produce a smooth flow, having practically no

sensory effect, or for powerful contractions, as desired. The patient is placed in an especially built chair, having large contact surfaces insulated from one another. The large size of these contact surfaces permits high milliamperage to be used while the current tensity per square inch is relatively small. A switchboard distributes current to the part under treatment by means of various rheostats. After placing the patient in a chair, the current is passed through the desired direction. The muscles of the body, so far as they are included in the circuit, are thus contracted rhythmically with great energy. It is stated that with each contraction the lower trunk muscles will raise weights of from forty to fifty pounds a distance of several centimeters in addition to their own weight. All of the muscles appear to be engaged in strenuous work, which the patient could not accomplish by voluntary exertions, yet this work is being done without the least fatigue. It is claimed that as a result of a single session (weighing a patient twenty-four hours after treatment) an average loss of weight amounting to from 200 to 400 grams may be obtained, though it is claimed that in some sessions a reduction of 1,000 grams has been made.

Container and Sterilizer for Record Syringes and Needles.

This apparatus has been designed by the manufacturers of the well-known record syringes for the purpose of keeping the syringes and needles in sterile solution, and thus always having them ready for immediate use.

The outfit consists of a heavy metal nickel-plated base, in which is cemented a glass container. A metal rack, arranged to hold 6 record syringes and their respective needles—namely, one each 1, 2, 5, 8, 10, and 20 cc. capacity

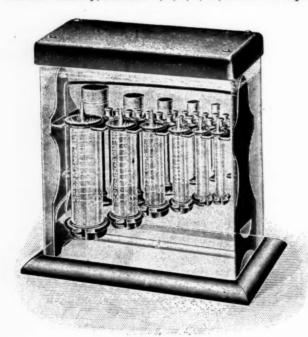


Fig. 1. Syringe sterilizer.

—and one record tuberculin syringe. When the rack is lifted out of the solution, four lugs automatically project over the edge of the glass, allowing the solution to drain back into the container. When the syringes are to be replaced in the solution, the lugs are raised together with the handle. The nickel-plated cover may serve as a tray for the individual syringes and needles.

This method of sterilization should recommend itself,

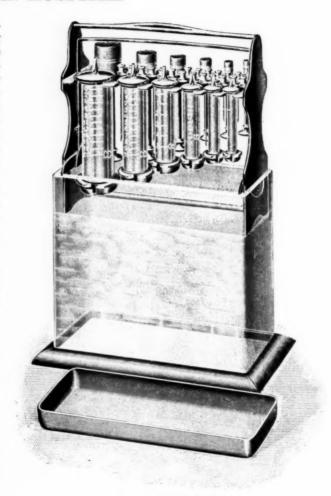


Fig. 2. Syringe sterilizer.

especially in hospital practice, as the present method of sterilization by boiling sometimes proves rather expensive in the course of the year.

A New Set of Uterine Dilators.

This set of dilators, which was designed by Dr. Jolly, were shown at the International Medical Congress in London last August, where they found immediate favor among the gynecologists and obstetricians. They are very light in weight, being made of spun brass and nickel plated. The anterior portion, as will be noticed from the



illustration, is open, so that the whole set can be nested, taking but a small amount of space in the instrument cabinet or physician's bag. A clasp is used, so that the dilators may be locked together for transportation.

The dilators are well shaped, having practically the same curve as the Hegar dilators, being slightly conical at the end, the difference between the point and the largest part ranging from 4 to 6 mm. The dilators are made in ten sizes, as follows: 3/7, 5/9, 7/12, 9/15, 12/16,

15/21, 18/24, 21/27, 24/29, and 27/31 mm. These dilators can now be secured in this country in two different assortments of sets, the small set containing six and the larger set ten sizes.

Rowntree and Geraghty's Modification of the Hellige Colorimeter for Renal Functional Test.

The method used by Drs. Rowntree and Geraghty, of Johns Hopkins Hospital, for the determination of the separation of phenolsuphonephthalein is recognized as being extremely accurate, and at the same time simple if their technic is carried out. The colorimeter of Hellige has been modified so as to better adapt it to the above test.

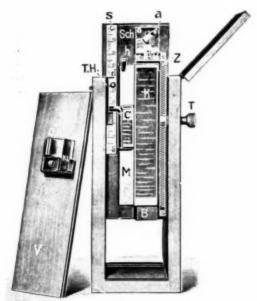


Fig. 1. Colorimeter.

The apparatus consists of a wooden case, the back and front of which are in the form of removable slides, as shown in Fig. 1. The front slide V is fitted on its outer side with a slotted plate, which forms the observation window, and behind this on the inner side is carried a Helmholz double plate D P. The latter is held movable between two spring clips K L. The back, Sch, can be moved up and down in a convenient manner with a rack pinion Z. The back plate has attached to it a hollow glass wedge, which is filled with the standard solution, made by diluting 1 cc. of phenolsulphonephthalein solution from an ampul with about 200 cc. of water, adding 10 cc. of a 5-percent solution of sodium hydroxid and sufficient water to measure one liter. This is the standard with which comparison will be made. On the left side of the plate is fitted a scale S, which travels along a pointer d. The open middle portion of the back between the rack and the scale is covered by a ground glass plate M, which is held in position by a small clip H. C is a small glass trough which receives the liquid to be tested. Both the standard wedge K and the specimen C having been placed in the instrument, the sliding scale is moved down to zero and the front of the box replaced. The observer now looks through the small slot, the knurled thumbpiece T is turned, and a reading taken when the color intensity, due to the thickness of the standard fluid, is equal to that of the solution under test.

The specimen to be examined is prepared by injecting the patient with 1 cc. of a solution of phenolsulphonephthalein, containing 6 mg. of the substance per cubic centimeter, either subcutaneously, intramuscularly, or intravenously.

Specimens of the urine are taken at intervals of five, seven, nine, and eleven minutes, the specimens being kept in small beakers containing a few drops of 10-percent solution of sodium hydroxid. The time during which the coloring matter appears in the urine-the latter assumes a reddish color by means of sodium hydroxid-is noted, and the patient is thus taught to collect in a larger beaker, after one hour and after two hours, but separately, the whole urine without any loss. The urine collected after one hour, which indicates the appearance of the coloring matter, is placed in a liter measurement flask, slightly diluted with water, 10 cc. of a 10-percent solution of sodium hydroxid added, and filled up with water to the mark. The specimen is then filtered and the cup of the colorimeter filled. The percentage of coloring matter in the urine collected after the second hour is determined, and, if necessary, is determined in the same manner a third or fourth time.

A New Instrument Sterilizer as Suggested by Dr. Fred Kuhn, Vienna.

This sterilizer has recently been placed on the market, and seems to have certain advantages in design which would recommend it as an office sterilizer or for the hospital dressing room. The chief advantage lies in the fact

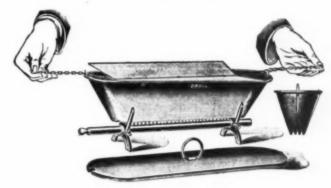
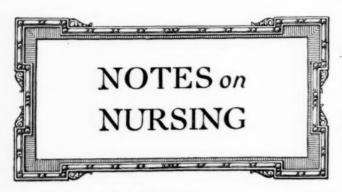


Fig. 1. Instrument sterilizer.

that it has a large heating surface. The body of the sterilizer is V-shaped, with grooves running longitudinally. These grooves are placed directly over the flame of the burner, and, on account of the surface which is exposed to the heat, water may be brought to the boiling point in less than two minutes. A hinged tray may be lifted out by two chains and held in position with hooks, as shown in the illustration. This allows the boiling water to drain back into the sterilizer and at the same time acts as a "hot plate." The body of the sterilizer, as well as the cover, are stamped of one piece of metal, thus preventing leakage in case the sterilizer should run dry on account of parts becoming unsoldered.

Many medieval writers have stated that hospitals originated from a combination of three supposedly antagonistic influences—religion, war, and science. This is disputed, and the truth probably is that Christianity was the origin of hospitals, as we understand the term. One writer puts it, "Hospitals were the distillate of Christianity, and war and science the byproducts." But hospitals, war, and science all antedated Christianity, so one may take his choice of theories.



A Royal Nurse.

"Sister Irmengard"—Archduchess Isabella, a niece of the Emperor Francis Joseph of Austria—who has for some time served as nurse in the Rudolph Hospital, Vienna, has accepted the appointment offered her by King Alfonso of matron of the Red Cross Hospital at Madrid. It will be remembered that the marriage of the Archduchess proved very unhappy, and was after a few weeks annulled.

A Hint to the Young Nurse.

Lastly, leave the anxieties of your most serious case behind you when you go off duty. To the very young nurse this may sound almost heartless, but in reality it is your greater service to your patient, for he is in the care of others, and your greatest efforts now in behalf of your patient lie in your relaxing and finding that quiet rest and sleep which will enable you to go trustingly through another night of careful watching when you are again on duty.—Miss May Hollister in American Journal of Nursing.

Florence Nightingale On Women.

Miss Nightingale had her moments of depression, and, as we have already indicated, relied more on men, and was better served by men than women. "Women have no sympathy," she wrote. . . . "No woman has excited 'passions' among women more than I have. Yet I leave no school behind me. My doctrines have taken no hold among women. Not one of my Crimean following learned anything from me, or gave herself for one moment after she came home to carry out the lesson of that war or of those hospitals."—From Sir Edward Cook's "Life of Florence Nightingale," in the British Journal of Nursing.

A Fourth Year of Nurse Training.

New Zealand has definitely established a fourth year of nurse training. In the Auckland hospital the innovation has been set to work. The last year is to be given over to massage, special training in maternity service, and studies in hospital administration.

Coincidentally with this added curriculum, the demand is made for specially qualified teachers from the medical staff, who shall be paid for their services. At the end of the course it is proposed that those who pass creditably shall receive diplomas of a special kind. It is prescribed further that "nurses possessing recognized general medical and surgical certificates shall sit for examinations, and, if successful, shall receive special certificates."

A Good Example.

The late Henry Untermeyer, of New York, by his will, recently probated in that city, set an example that may be followed by others with every certainty that it will do a great amount of good. He left to Mt. Sinai Hospital

Training School for Nurses the sum of \$2,500, the income of which is to be given each year as a prize to the pupil nurse holding the best record for the year for kindness and proficiency. Pupil nurses are very human young women, and there is hardly a more appreciative class of workers. Unfortunately the habit of regarding them as a fair class for exploitation is too common. The "pretty nurse" is used for decorative purposes in the hospital too often, and as a beast of burden the rest of the time. May the suggestion in Mr. Untermeyer's will find lodgment where it will do the most good.

California's Eight-Hour Fight.

The fight over the eight-hour day for pupil nurses in California is growing ever more vigorous and vicious, even though the United States District Court has upheld the constitutionality of the act. The women have openly admitted that the law is not a good thing for the hospitals, but that the public derives the benefit.

Mrs. Charles Farwell Edson, discussing the matter a few days ago before the women members of the Railway Mail Auxiliary at Los Angeles, spoke partly as follows:

"It has been demonstrated by practical statistics that 95 percent of the women who come under it are materially benefited by the law, and consequently an amendment was added during the last session of the legislature including the student nurses. Graduate nurses are still permitted to work as long as they choose, but we felt that it is unfair to the public to permit student nurses to be put on cases that require skilled attention and kept on them for weeks at a time at the rate charged for trained nurses. That frequently has been done to the detriment of the nurse and the patient. Since patients dislike a frequent change of nurses, it becomes necessary for trained nurses to attend only to serious cases, which is good for the enforcement of the eight-hour law, but which has excited the animosity of the commercial hospitals, which are forced to pay higher wages for skilled attention. But the public benefits, if the hospitals do not, from this change."

Younger Probation Nurses.

The question of the shortage of nurses again occupied the attention of the Metropolitan Asylums Board at a recent meeting in London. The Children's Hospitals Committee reported that it had decided to reduce by one year the age at which probationer nurses might be engaged at children's hospitals. The present minimum was 19 years, but difficulties had been experienced in obtaining a sufficient number of candidates of this age, although applications were sometimes received from candidates of 18 years of age who were in every way suitable. The committee thought it likely that one cause of the shortage of nurses was the fact that the career could not be entered upon early enough; healthily situated children's hospitals, such as Queen Mary's, might serve a useful purpose in allowing young women to start their training at an age when many were desirous of beginning work. The committee learned that probationers were taken at 18 years of age at several children's hospitals, including the Royal Hospital for Sick Children, Glasgow; the Alexandra Hospital for Children, Queen Square, London; the Birmingham and Midland Free Hospital for Sick Children; the Children's Hospital, Cheltenham; and the Royal Liverpool County Hospital for Children. It would be arranged that probationers of 18 years of age would start work on the girls' side of the hospital during their first year.

A surplus of \$700,000 has accumulated in London since the Lloyd-George panel doctors' law went into effect, because 400,000 poor persons have declined to employ the panel doctors assigned them.



Terrazzo Floors That Crack.

To the Editor of THE MODERN HOSPITAL:

What is the advantage of the six-sided slabs of terrazzo flooring over that which is spread solid for a whole floor? The slabs cost more.

T. W. A.

The slabs cost a little more—not much, but they are cheaper in the end. This kind of flooring is generally used with steel and concrete construction. After the building is completed, it will always settle a little, and almost invariably your solidly laid floors will crack—sometimes more and sometimes less, according to the amount and directions of settling. You never can patch a solid terrazzo floor; the more you try, the worse it looks. But the cracks will usually follow the cracks between the slabs, and, even if a few slabs crack, you can remove them and put in others, and you will not know that there ever was a crack. Some very fine new hospitals in this country are badly marred by cracks in their solidly laid terrazzos.

White Tiles Turned Gray.

To the Editor of THE MODERN HOSPITAL:

How can we bring back the pretty white effect in our vitrified tile operating room floors? They are the little three-inch, six-sided tiles, guaranteed by the contractors to stay white. We have had the contractors here any number of times, and they scrub them and make excuses, putting the blame on us for letting the floors get so dirty, but they do nothing else.

C. D. M., Minneapolis.

Although the manufacturers claim that these tile are impervious, they certainly do admit dirt. I have washed these tile with soap and warm water to clean the outside, and have then placed them in various culture media to test their impenetrability to microorganisms. I have never got any cultures when the technic was dependable, so they do not harbor harmful bacteria. But you will never get them white, no matter what you do—at least I have never been able to do so, and have almost exhausted chemistry, acids, and alkalies in the attempt. You can get them white by grinding them down, but that is wholly impractical.

JOHN A. HORNSBY.

Graniteware Kitchen Utensils.

To the Editor of THE MODERN HOSPITAL:

Is there any place where we can buy graniteware kitchen utensils like those that we used to buy years ago? I am sure that the stuff we buy now cannot compare in durability with the old kind. The enamel chips off on the slightest provocation.

A. B. D., St. Louis.

You cannot buy that old, durable stuff now for the reason that the public demanded something else, and just what a foolish public wanted is being served to it. The ware to which you refer was made of soft cast iron, thick and heavy; the enamel was fused into the pores of the iron at something like 2,500° F., and the two became one substance that could not be broken apart. The public found fault with the weight of the utensils, and the

makers then changed to hard rolled steel, in which case the enamel is merely baked on and not fused into the metal. That is why it chips. There are practically no patents on the new stuff and the old patents are all expired. Today the making of graniteware and enamelware is merely a question of price; the public wants cheap stuff and is getting it.

Distributing Food Costs.

To the Editor of THE MODERN HOSPITAL:

When we figure the cost of raw food for a hospital, we are expected to charge against patients the cost of their own food and that of the well people necessary to care for them. The question of the distribution of the food cost between the two classes, patients and well people, has come up in our hospital in an attempt to cut down the bills. Can you help us solve this problem?

We can estimate and speculate as far as we please on the subject, but I doubt whether we can settle anything, and, moreover, I doubt whether the solution will be worth anything. Dr. Mann, of the Massachusetts Homeopathic Hospital, Boston, in a report to the American Hospital Association last August, debated this topic, and he also cited the opinion of Dr. Howland, of the Massachusetts General Hospital, to reinforce his own judgment that such microscopic inquiry as this costs more than it is worth.

If all the help are fed in a separate kitchen, at a distance from the hospital proper, and if the food is received in and distributed from separate store rooms, it might be possible to tell just what each kitchen was costing, and the costs would then be broken up on a per-capita basis. But there would be a lot of waste and unprofitable feeding under these conditions, because left-overs from a meal in the patients' kitchen could be economically fed to well people later, and the cost account would be muddled thereby, as it would be impossible to fix an accurate price for such food.

Then, if you buy carcass meat for the institution, with the intention to feed the choice cuts to patients and the cheaper parts to well people, just where are you going to draw the cost line—which piece has cost 22 cents, for instance, and which has cost 9 cents, when the carcass cost, say, 17 cents as a whole? The whole argument is about as satisfactory and profitable as the one involving the short- and the long-tailed rat as to which got in the hole first.

Foolproof Water Mixers.

To the Editor of THE MODERN HOSPITAL:

Is there any hot and cold water control valve or mechanism on the market in which the temperature of faucet waters can be accurately measured? We are having much trouble, especially with the hot water faucets, and we are fearful all the time that nurses may burn patients by turning too hot water into the bath tubs, and that they will burn themselves at the hot water faucets.

Various articles have been written concerning the value of temperature control in the modern hospital. Statistics have been compiled, and the consensus of opinion indicates that the irregularity of room temperature and improper ventilation is due to the inefficiency of the man in charge, rather than to the system installed. Careful planning by eminent engineers and authorities in hospital equipment have brought about satisfactory results, which have emphasized the fact that it is possible to control temperature, and properly ventilate each room by scientific methods.

Special attention is given to sterilization, filters are installed to purify the water delivered throughout the institution, water is heated automatically with steam from most elaborately equipped power plants, giving a supply of hot water in abundance for cleansing and bathing purposes.

Rarely, if ever, do we test the temperature of the water which flows from the faucet provided for filling the bath or supply to the shower. A test with the thermometer in many cases would instantly register the signal of danger. With water flowing at a degree of temperature above the scalding point, demented patients, convalescents, and children are too often allowed to go unattended to the toilet and bath room, with occasionally a serious and alarming result. Possibly the nurse may accompany the patient and may have adjusted the flow of hot water at a desired temperature, and thus performed her duty. But the nurse or attendant cannot control the individual if he draws cold water from a plumbing fixture nearby; the pressure and volume of the flowing hot water changes instantly, and it is impossible at such times to remove the patient quickly. Consequently an accident occurs, the patient suffers, and the cause is attributed to the inefficiency of the man in charge of the plant from which the hot water is supplied.

Equal in importance to the regulation of the temperature of the room at all seasons of the year is the regulation of the hot water, so that bathing under all conditions from the maternity and children's ward throughout the hospital to a convalescent stage may be administered with scientific exactness within a degree of Fahrenheit without the use of live steam.

Engineers who realize the necessity of circulating the water throughout a large institution at a high degree of temperature have investigated to the full extent, and the statement is made that in the planning of hospital equipment in the future it will be possible to safeguard patients from the dangers of high temperature. In many hospitals during the past two years this has been accomplished in a most satisfactory manner by use of efficient thermostatic mixing valves, which will maintain the desired temperature delivered to a single plumbing fixture or group of fixtures, regardless of the condition as to unequal pressures or fluctuating temperatures.

Absolute nonscalding and foolproof protection is essential. Maximum economy in water and fuel use results in the adoption of proper and efficient hot water regulation throughout the hospital.

How to Get Rid of Vermin.

To the Editor of THE MODERN HOSPITAL:

We are troubled with rats, mice, and roaches—or, as they are sometimes called, water bugs. We fight them faithfully, keep things as clean as possible, yet they persist. What can we do? Part of our building is old, but these pests are invading the new building.

J. W. B.

With all due respect for your assertion that you are fighting them faithfully, I take the liberty of doubting your statement. If you had written that you were fighting them "vigorously," I would believe you. As a matter of fact, isn't this what you are doing: calling in the house-keeper and giving her a good talk about getting rid of your pests? And isn't she then calling in one of the maids or men servants and telling them to get busy? In other words, are you not contenting yourself with raising a row about it, and leaving the work to some one else, generally a person who is paid for hand work and not head work?

These pests are hard to rout out, once they are established, and only good head work will vanquish them. Get

on the job yourself, make a personal examination of the territory where they seem to have their rendezvous, and find out the conditions that provide a home for them.

Each pest will have to be fought separately. Don't look for rats upstairs, unless for an odd one here or there that may have become penned up so that he can't get back to his brethren. Such a one you may catch with the so-called "squee-gee" spring board trap. Cut the tongue of the bait board off short, so that he will have to go right up under the spring to set it off; otherwise it will hit him on the nose, and you will never get another chance at that fellow. The makers make the bait board too long.

The only way to get rid of rats is to catch them, and it can't be done with traps. A few can be caught that way and a few can be poisoned, but rats are just like human beings-some are smart and some are stupid; you can't catch the smart ones. Get in a professional "pied piper." There is one of these men in almost every community, who can take his lantern and tongs, go to the kitchen or the garbage barrel, or the basement, and get every rat. Don't let him stop because he catches only two or three a night; it is these two or three that will bring a new brood along every fifteen or twenty minutes-almost. Then stop every opening by which they can get in from next door. Sometimes there are basement doors that are left open, sometimes runways under the basement floors; but they can all be stopped up with waterproof cement or glass or metal. That will end your rat troubles. It may take your expert every night for two weeks, but it is worth it.

You can't catch your mice, and you are wasting your time trying. The few you can trap or poison will make no impression; they breed faster than the traps and baits will catch them. Starve them out, and you can't do it by stopping up a hole here and there. They live in the floors, the walls and ceilings; but they must eat, and, if you prevent them from eating, they will die. So go over the house, not only "faithfully," but efficiently; find every exit and stop it, not with a plug of wood or metal, but with a large piece of tin or sheeting nailed over. They will eat a hole through an inch plank beside a former runway hole in half an hour, and a mouse's time is not too valuable for that; but if, when he gets through the wood, he finds a tin plate between him and his accustomed food supply, he will try another hole and then another; he will go through white plaster, but not through cement. If you must use white plaster or plaster of paris to stop holes, put powdered glass in it on which he can use his teeth. The main thing is to actually stop every hole, so that he can't get through or cut around. Do it yourself or personally superintend the job. Mice find good feeding in the wards and private rooms, so the holes in them must be effectively stopped also. Don't forget the spaces around the pipes.

Now about roaches or brown water bugs. These insects live in the dark, warm, wet places, usually around the water pipes or in closets under the sinks. You can't fleep your plumbing dry because of the sweat of the cold pipes; but you can open up things in many places, and when you can't open up you can seal up with cement. Make everything bug tight. Don't leave this to a servant, but see to it yourself, and, before you begin, sprinkle borax liberally about their exits, or, better still, set dishes of concentrated lye and molasses, equal parts. When you have killed all you can, seal up the cracks—not just those that are visible, but all of them. Sometimes these pests live in the basement and wander about the house to the top floors at night.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Buy high-priced rubber goods. There is nothing else in the hospital so expensive as cheap rubber.

Don't believe everything you hear in the hospital, but hear everything you can. Knowledge is power, but don't encourage "snitching." Heaven defend us from tale bearers. They often tell us lies that we cannot "catch them at," they generally prejudice us against worthy employees, and they always make us unhappy.

Many rooms in the hospital will look warmer and more inviting and attractive if they have rugs on the floor. Extremely pretty, figured rag rugs are made nowadays that are inexpensive and wear forever. They are washable and can be sterilized. It is a great comfort to have a lot of them about.

In nearly every hospital there is a scarcity of flower pots. These can be bought in varying sizes for an average of about 50 cents apiece. They are fiber, come in green and terra-cotta colors, and can be had of the woodenware houses. They are very light, are entirely impervious, and will last for years.

The walls in hospital rooms look bare and unattractive at best, and sick people get very tired gazing at blank walls, no matter how soft a color they may have. Some exceptionally pretty effects can be had with cheap prints pasted to the wall, given a paint border and varnished over. These are especially attractive in the maternity department and for children.

Make your heads of departments friendly. Have plenty of conferences with them. Hear what they have to say about their work. Make them give you advice, and take it a good many times. The very fact that they give you advice shows that they are thinking about their work, and the fact of your taking their advice shows that you appreciate them, and you will get a better service all around.

Encourage visiting friends of the hospital to take an interest in things. Show them the things in which you think they would be interested. Tell them little stories about incidents in the institution. Awaken their lively interest in the hospital and its work. A little story about something that a little child patient did, or said, will travel further and often do more good than a volume of sermons or a discourse on finances.

Some of the largest donations ever given to a hospital come from grateful patients, and a sick pauper of today may be a millionaire tomorrow—or in ten years. A man walked up to a superintendent not long ago and handed him a check for \$1,000, saying: "This is interest and principal that has been running for thirty years. This hospital was good to me when I had no money. Now I can pay. I was a boy then. Now my daughter is upstairs. She has a new baby, and I am a grandfather. I give you this money, and hope it brings me good luck and does you some good, too."

Try to persuade your doctors to attend such little ward ceremonies as high rectal irrigations, stomach washings, and test breakfasts. Try to get them to take personal charge of intern's work, like venesection, serum and antitoxin injections, subcutaneous and intravenous irrigations. Sometimes these things fail to act because they are not properly done, and a doctor can often suggest improvements; besides, doctors are generally under the impression it takes no time or labor to do these things, and they call for them when it is unnecessary, which they wouldn't do if they were brought in personal contact with the work themselves.

Hinged screens on the doors of private rooms will be greatly appreciated by convalescent patients. The carpenter can make them out of 1x2 dressed stuff, and the painter can stain them to conform to the woodwork. They are made with one large panel at the bottom and two small ones above. Usually they are made to come within about a foot of the floor at the bottom, and extend a little more than head high at the top. They serve to screen the patient from prying eyes of passersby, and yet he gets the benefit of the busy life on the corridor. He hears action and talk, and likes it. The door can be closed when he wants to be quiet.

Appoint somebody in the hospital to have charge of apparatus, tools, and appliances of all sorts, and to keep them in order. What is everybody's business is nobody's business, and don't expect the person that you charge with this duty to be popular in the hospital. Only a person with a continual grouch can be successful as the custodian of apparatus, because everybody wants to borrow, everybody breaks things, and nobody wants to be held accountable.

When you find a worker in the hospital doing his job well, even if he is only a floor scrubber, show him that you appreciate his service. You needn't raise his salary every time, but a kind word and a little encouragement will do just about as much good and cost only a little effort. There are some hospital administrators who are as begrudging of a word of appreciation as they are of a raise in salary. They could always afford the one, while they might not be able to give the other.

Don't ask nurses to carry each individual tray from the serving room to the patient. That is a waste of energy. Dr. Gilman Thompson, of New York, put a pedometer on a nurse not long ago who had twenty patients to feed, and she walked seven and a half miles feeding these twenty people three meals. Then he put in a food truck and saved five miles a day for the nurse. It takes a nurse about two hours to walk five miles and another hour to handle the trays, so that the food truck saved the nurse, and therefore the hospital, about three hours a day on every twenty patients.

An active, virile women's board is about the best asset that any hospital can have. Women have a great deal of sympathy for the sick, and nowadays, it seems, they have a great deal of leisure. You will be doing them an excellent service if you can find work for them, and they will be grateful. Women talk a lot, too, and, if they are made to feel that their service is appreciated by the hospital people, they will keep the hospital in the good graces of the public. Women are also great beggars for charity, and they will fill your larders and your linen closets. Therefore, get a good board, with plenty of members, and a good, active president, and keep them so busy rustling on the outside for the hospital that they won't have time to meddle with your business inside.

BOOK REVIEWS.

Orientation of Buildings or Planning for Sunlight. By William Atkinson, Fellow of the Boston Society of Architects. Cloth. Pp. 140. Price, \$1. New York: John Wiley & Sons, 1912.

In his book, of 140 pages and a great number of illustrations, Mr. Atkinson has really achieved something. His main purpose has been to demonstrate the construction of high buildings in such a way that the largest amount of light can be achieved over the greatest number of hours in a day and at all seasons of the year. He concludes that the best way to do this is to build with the northwest-southeast or northeast-southwest exposure, so that the sun in traveling around will reach the greatest possible number of windows for the longest possible time. There are an immense number of drawings, showing shadows for various seasons of the year and various hours of the day. His treatment of sunlight in hospitals covers about thirty pages, and he shows the different plans and different groupings, with various heights of buildings and their shadow markings, which are most illuminating.

The author's illustration of the style of architecture of the Peter Bent Brigham hospital-that is, the arched single-story pavilion-would be likely to bring up controversies among thoughtful hospital builders, and not all of us would agree with Mr. Atkinson, who seems to think that the style of his hospital structure need depend on nothing else than the question of sunlight, which, of course, is the fault of all architects. Mr. Atkinson forgets that this building has to be cleaned and has to be administered, and that the question of cost has something to do with the style of architecture; but his book, on the whole, is a most illuminating one and helpful.

An Operating Theater in Private Practice. By C. Hamilton Whiteford, M. R. C. S., L. R. C. P. Cloth. Pp. 75. Price, 3s. 6d. London: Harrison & Sons, 1912.

This is one of the sanest little books concerning the subject-matter of the discussion it has been the writer's pleasure to see in a long time. It is a small book of 75 pages, and describes the operating suite of a "Nursing Home" with which the author had much to do in the planning. He discusses everything-arrangement of rooms, floors, windows, doors, water supply, light, heat, signals, sterilizers, and so on. He even goes into the details of material for the operating rooms, such, for instance, as costumes for the doctors and nurses, caps, masks, rubber gloves. He gives the technic of preparation of the patient, discusses instruments and trays, dressings of various sorts, lotions, catgut, goes into the question of positions of the patient, discusses all sorts of operating room accessories, such as bottles for soap and saline solutions, nail brushes, irrigators-in fact, there is no detail of operating room architecture, or equipment, or technic, that the author doesn't go into in a sane and sensible manner. It is a most instructive little book.

Diet Lists of the Presbyterian Hospital, New York City. By Herbert S. Carter, A. M., M. D. Cloth. Pp. 129. Price, \$1 net. Philadelphia and London: W. B. Saunders Company, 1913.

We have come to recognize the diet lists of the Presbyterial Hospital as authoritative. We can, therefore, welcome a book on the subject of these lists. In the 121 pages of this book almost every phase of special diets is gone into, with lists for various purposes and comments on the various forms of diet. These comments are, of course, the most valuable part of the book, because they explain just why certain articles are given and certain articles withheld. In the measurements of chemical contents of the various items of food the Atwater tables of the United States Department of Agriculture are used.

Applied Bacteriology for Nurses. By Charles F. Bolduan, M. D., and Marie Grund, M. D. Cloth. Pp. 160, with illustrations. Price, \$1.50. Philadelphia: W. B. with illustrations. Price, \$1.50. Philadelphia: Saunders Company, 1913.

This is about as simple a presentation of the very diversified topics which we usually classify under "bacteriology" as could be imagined. The authors take nothing for granted. They begin with a short history of bacteriology from its inception in the seventeenth century down to the present day. Besides plain, simplified study in the various microorganisms, there are chapters on disinfectants and sterilization and infectious diseases and their transmission; there are also short treatises on immunity, antitoxins, and serums, and a chapter each on the bacteriology of milk and water and food. The usual sources of infection in the various so-called infectious diseases are debated in an interesting manner. is in every sense what it claims to be, "Applied Bacteriology for Nurses." Of course, if we were to go into the question of whether the average nurse can assimilate the matter in this book, we would be upon dangerous ground, because a very excellent general education is presupposed in the student. The book is extremely well illustrated, with a few cuts in colors.

Modern Methods in Nursing. By Georgiana J. Sanders, formerly superintendent of nurses at the Massachusetts General Hospital, Boston. Cloth. Pp. 881, with 228 illustrations. Price, \$2.50 net. Philadelphia: W. B. Saunders Company, 1912.

This is the third reprint and the second revision, and it is a most excellent nursing manual and reference book on nursing. Almost every topic is discussed in a sane and sensible manner. It seems difficult to go into such topics as bacteriology, the various acute infections, and the nursing technic in surgical cases without muddling the subjects beyond the capacity of most pupils in training, but the author seems to have done it all quite satisfactorily; in fact, she has constructed two books in one-the one wholly satisfactory for the backward young woman who hasn't had a very good education, and the other for advanced students who are quite capable of mastering the intricacies of bacteriology and the kindred sciences. The food chapters are especially worthy of comment. Without being in the remotest degree hazy or complicated, there is a tremendous amount of interesting matter on the physiology of the digestion, the chemistry of foods, and their preparation.

Most works on nursing that are as pretentiously constructed as this take the reader into abstract discussions of the various topics, usually from the standpoint of science, and to this extent most of these works are valueless. Miss Sanders has achieved almost the impossible in this respect, as, for instance, she discusses vomitus, sputum, feces, urine, etc., and the technical examination of these excreta, including such technic as Ehrlich's diazo reaction, and not for a moment does she ever leave the viewpoint or the point of comprehension of the nurse in training. The book is an excellent one in every respect, and every nurse and every nurse pupil ought to have it.

One of the earliest Chinese explorers of the interior of India returned with the report that there were hospitals in the least civilized parts of that country where human beings and domestic animals were given the same care.

WHAT EUGENICS REALLY IS.

Popular Interpretation Wholly Misleading—Study of Heredity Must Precede the Remedy.

The science of eugenics seems to have got into the hands of its enemies. At least many of us think it is going in the wrong direction and along illogical paths. It is therefore refreshing to have a halt called by someone who has a working knowledge of the science, and who is familiar with the steps that have been taken to bring it to the present status.

Professor Karl Pearson, in a recent letter to the London *Times*, has applied so wholesome a corrective, and has administered such a sane warning to those who have acquired a hysteria on the subject, that a portion of the letter is reprinted:

"I should be glad if you can spare me space in a journal which reaches the more serious-minded section of our population for a word on the present position of eugenics as a science; for to those of us who wish to spend our remaining powers of work in the study of the factors which make for race efficiency the current attitude of public opinion on the subject of eugenics is at once disheart-

ening and exasperating.

"It is well known that the founder of the science of eugenics, the late Sir Francis Galton, thought that progress toward increased race efficiency could be made by two routes: 1, by the scientific study of heredity and environment as they bore on racial development; and, 2, by a popular movement emphasizing the importance of these factors in national welfare, and urging their proper appreciation by legislators and social reformers. It is difficult to conceive any reasonable opposition to such a view; but much difference of opinion may exist as to whether very definite progress by 1 should not be made before we start on 2. Several of us who were working on the subject differed from Sir Francis as to the relative urgency of 1 and 2; we saw the danger that before the lines of the science of race efficiency were firmly drawn and substantial foundations laid, the whole subject of the new science would be made ridiculous by the efforts of an uninstructed press to tickle the taste of a jaded public, using catchwords from a science which implicated in certain branches—even as the sister science of medicine does—problems of sex.

"Some of us were not so young as to be ignorant of the débacle which overwhelmed sociology owing to the overhasty popularization of an immature branch of knowledge in 'social science' congresses. We predicted a like fate for eugenics. Sir Francis Galton was in the problems of race an optimist—a splendid optimist; but even he in the last few months of his life saw that the popular movement he had started was likely to outgrow its knowledge, and feared that more evil than good might result from it. This fear seems to me to have been sadly realized in the few years that have elapsed since his death.

alized in the few years that have elapsed since his death.

"Eugenics, in Sir Francis Galton's mind, was to be a
science of race efficiency, with its academic center in
every university—a great and increasingly important science. It has become a subject for buffoonery on the stage
and in the cheap press. We are treated to 'eugenic' marriages and to 'eugenic' babies, and to 'eugenic' plays
which have nothing whatever to do with the problem of
race welfare; officials of eugenic societies submit to being
interviewed with regard to well-advertised babies, and
anyone who stands wholly apart from such absurdities
may wake up one morning to find his name associated
with a 'eugenic' baby, whose very existence he has never
heard of! He is left with the alternatives of grinning
with the rest of the world or bringing an action for libel.

"What we feared might result has become a fact. Eugenics is rapidly developing into a topic for the poseur, the 'Kongressbummler,' and the paragraphist. 'Eugenic aspirations have begun to appeal to the imagination of the public,' so the report of a eugenic society tells us, and the fitting comment is found in the public writing of the daily press and contrasting the relative effectiveness of 'eugenics' and 'ancestry'! Even on a slightly higher plane we find the same disheartening experience, eugenic publications and eugenic congresses issuing statements with regard to such vitally important topics as insanity, men-

tal defect, or the influence of heredity and environment which are obviously or demonstrably incorrect. We have not yet nearly adequate knowledge on these topics. Years of patient work in medico-social observation, in genetic experiment, and in careful study of family history are needed before the laws of eugenics as a science can be dogmatically stated. When we meet such dogmas proclaimed in the name of eugenics as 'At last it is possible to give definite advice to those about to marry or who do not wish to transmit their undesirable traits. Weakness in any trait should marry strength in that trait, and strength may marry weakness,' we stand aghast at the evil worked by the rapid popularization of 'eugenics' and recognize the certainty that a movement thus careless of its facts and vaunting in its conclusions must collapse, as the older 'social science' collapsed.

"The actual science of race efficiency, the study of the relative influence of heredity and of environment on racial welfare, will not collapse; it has, I believe, a great future before it, but it will inevitably be damaged by the hasty popularization which has misapplied the word invented by Sir Francis Galton to describe a definite branch of science. My object in writing to you, sir, is to emphasize the point that much that is posing as 'eugenics' today has nothing whatever to do with science; that students of the science of race efficiency will be compelled more and more to drop that much-abused term, and to class their work, as the Germans have done, under the broad titles of race hygiene and genetics. Let those who have at heart the great problem of race efficiency turn rather to the academic than the popular side of the movement. What we need in this country is, in the first place, knowledge, and this is to be obtained only by establishing in close connection with all our universities laboratories for the study of medico-social statistics and for inquiries as to infant and child welfare, and institutes or farms for experimental breeding and for the study of experimental

EUGENICS AS OLD AS HISTORY.

Ancient Greeks Employed Methods More Radical Than Now Suggested—Doctors Were Arbiters of Marriage.

Of course we learn from history that the questions relating to race suicide and the betterment of the human race were problems almost back into the savage state of mankind, but nevertheless it is quite a shock to our self-esteem when we are told that eugenics is not, after all, a modern science, and that even the name was not originated by Sir Francis Galton, but is of ancient Greek origin—name, science, and details.

The Greeks, with their philosophy of stoicism, went further than it is likely that even the most radical theorists of our day would dare suggest, and they did it in fact as well as in theory.

Dr. M. Moissidés, a Greek physician, now living in Constantinople, has contributed a most interesting chapter on this subject in a Greek periodical, translated by the British *Medical Journal*. Says Dr. Moissidés:

"The Greek laws show that these people were a good deal more advanced and more thoroughgoing in the application of eugenic doctrine than we are even at the present day. Great attention was given to the matter by statesmen and philosophers, as well as physicians, and a keen interest in the matter was taken by women. In the regulation of marriage, careful selection—natural and artificial—was recommended by the great thinkers of ancient Greece, and this was enforced in some places with excessive rigor. In Crete the handsomest and most robust of each stock were compelled to intermarry, with the object of perpetuating a fine type. It was recognized that puericulture before procreation was the most important part of eugenics. Lycurgus forbade unions which might imperil the vigor of a military people or taint the purity of an aristocratic race. A heavy fine was imposed on King Archidamus because he had taken to wife a woman of short stature, and thus risked giving to Sparta 'kinglings in place of kings.' The authority for this is

Plutarch in his treatise on the education of children. The same author, in his life of Lycurgus (North's translation), says that, 'Beginning afar off, he first considered the state of marriage and the generation of children. . . . First of all, he willed that the maidens should harden their bodies with exercise of running, wrestling, throwing the bar, and casting the dart, to the end that the fruit wherewith they might be afterwards conceived, taking nourishment of a strong and lusty body, should shoot out and spread the better; and that they, by gathering strength thus by exercises, should more easily away with the pains of child-bearing.' The child was inspected after birth by the elders among his kindred, and, if they found him 'deformed, misshapen, or lean, or pale, they sent him to be thrown in a deep pit of water which they commonly called Apothetas, and, as a man would say, the common house of office; holding opinion it was neither good for the child nor yet for the common weal that it should live, considering from his birth he was not well made nor given to be strong, healthful, nor lusty of body all his life long.'

life long.'
"Plato, in his 'Laws,' says 'the state alone should regulate marriages, not according to the will of the parties, but solely in view of the general good of the nation.' He held that it was the duty of the magistrates to choose the bravest men and the most beautiful women so as to obtain specially good offspring. Aristotle wrote to the same

effect.

"Although not exactly agreed as to the proper age for marriage, all the Greek authors condemn unions between parties either too young or too old. Too early marriage was considered very injurious for the species as well as the individual. Aristotle says the children of such unions are weekly, small, and bodily incomplete. On the other hand, he says that men advanced in years produce only beings incomplete in body and mind, while the offspring of very old men are weakly. At Athens, although the free consent of the contracting parties was necessary, a minute examination of the bodies of both was made before the union was sanctioned. Physical exercises were enjoined on women, especially in Sparta. At Teos there was coeducation, the girls mingling with the boys, not only in lessons, but in exercises. In other places they competed with the young men in the palæstra. It would appear that women ceased to devote themselves to gymnastics, at least in public, when they were married."

Midwives seem to have played a great part in arranging suitable marriages.

"Athenæus of Tarsus, a celebrated physician, insisted on a careful preparation of mind as well as body in those who wished to beget offspring. The mind must be calm, free from anxiety or weariness. The body required exercise—sufficient, but not tiring—and good, nourishing food, easy of digestion. Overindulgence was condemned, and it was enjoined that women should be allowed an interval between conceptions sufficient to enable them to keep their health, so that they might bring forth vigorous offspring. This was also insisted on by Soranus of Ephesus, the greatest gynecologist of antiquity."

CHILD HYGIENE IN NEW YORK.

Mothers as Well as Infants Are to Be Given Care by the City Health Department.

Another link has been added to the chain of effort in the reduction of infant mortality in New York by extending the activities of the milk stations to include the care of pregnant women. Thirty-six percent of infant mortality occurs in the first month, the authorities have ascertained, and the majority of these children die either because the mothers were physically unfit to bear healthy children or because of their ignorance of the proper care of their offspring during the first weeks of life. The milk station at 2287 First avenue, Manhattan, has been selected as a center for the instruction of nurses in prenatal work. When sufficiently familiar with its details, they are to be assigned to other stations to carry it on. The nurses assigned to this work canvass the neighborhood and persuade expectant mothers to place themselves under

medical care as early in pregnancy as possible; they communicate with the doctor of the hospital under whose care the patient may be, and explain the desire of the department of health to cooperate and the manner and degree in which it is prepared to do so; they instruct mothers in detail with regard to diet, fresh air, food, exercise, clothing, etc., and impress on them the importance of nursing their infants.

In normal cases visits are made every ten days antepartum and every three days post-partum; in abnormal cases, as often as may be necessary. Visits are made for one month after labor. The mothers are then requested to enroll their children at the milk station, where they are cared for during their first and second years.

The health department states that to date 175 mothers have been enrolled, of whom 25 have given birth to children. While it is too early to show by figures what can be accomplished, it is most gratifying to note the appreciation of the mothers and the enthusiasm of the nurses.

ONE MAN'S IDEA OF CHARITY.

Destitute Mothers and Their Children Cared For-The Latter Educated Under Inspiring Conditions.

The Sand Springs Home, near Tulsa, Okla., is to extend its work among destitute mothers by the addition of several new buildings, which will be erected this coming spring. This is a most worthy philanthropy, founded by Charles Page, a wealthy oil operator. The Sand Springs Home has had a school in connection with it since its foundation about five years ago. Here all of the children in the home old enough to attend school are being educated by expert teachers, and the children of the destitute mothers will be educated there. For those too young to attend school a kindergarten is being established at the home. For the mothers the home will find employment in some of the numerous factories at Sand Springs, where work in the packing departments is chiefly done by women.

The Sand Springs Home now contains something like 100 children, and, besides numerous matrons who watch over the little ones, the home recently employed an athletic director to have supervision over them on the playground.

Two years ago the Sand Springs Home erected one of the largest greenhouses in the southwest for the purpose of supplying the home and its grounds with flowers and plants and shrubberies. It is now building greenhouses covering more than half an acre, which will be devoted to growing vegetables for winter use at the home, marketing the surplus in the city of Tulsa.

Modern Care of the Criminal.

More and more, in these enlightened times, are the courts calling physicians to their aid in the administration of justice. The present week, for instance, a boy charged with a series of thefts was before a judge in Pottstown, Pa., who ordered a careful medical examination of the defendant. Doctors found that the stealing habit was the result of a blow on the head with a club, received by the lad twelve years ago at the age of 6, and he was sent forthwith to a hospital to be reformed through a surgical operation for the relief of pressure of the skull on the brain. If this juvenile offender had lived in the old days, he might have been hustled off to a jail for punishment to satisfy outraged society.—Boston Globe.